CONSUMERS' RESEARCH

Bulletin

June 1949

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CONSUMERS' RESEARCH

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Off the Editor's Chest

AS the hot weather season arrives, there will no doubt be found an occasional health columnist who will rush into print with advice to cut down on the amount of meat eaten and to concentrate on vegetables and salads. The superstition that it is unhealthy to eat meat in the summertime, which is now known to have no foundation in fact, dies hard. One of the most widely quoted studies which shows the fallacy of this belief was made by Dr. E. B. Forbes and Dr. R. W. Swift of Pennsylvania State College. When the effect of a diet of protein, fat, and carbohydrates was measured, it was found that the carbohydrates produced the greatest increase in metabolism, with protein next, and fat last. It has also been pointed out that wartime research debunked the old notion that meat should be eaten only sparingly in the tropics, and that a high protein diet had an important bearing on the low rate of disease of U.S. troops stationed in the tropics during World War II.

The importance of a high protein or meat diet to health and well-being has long been stressed by Consumers' Research. We began to pick up and report studies and researches in the field some ten years ago. The significance of this trend in nutrition is excellently evaluated by Dr. James S McLester, noted medical nutrition expert of the Medical College of Alabama, University of Alabama, in a lecture entitled "Protein Comes Into Its Own," which was recently published in the Journal of the American Medical Association.

The history of nutrition is divided by Dr. McLester into five eras. First was the "energy era" of such students of the body's metabolism as Liebig, Atwater, and Lusk, when prime consideration was given to energy exchange and attention was centered on calories. Then came the era which Dr. McLester calls "adequacy in diet," when physicians discarded the doctrine that any illness could be cured by starvation and began to put their patients on a more liberal diet, thereby shortening the period of illness in many cases and minimizing the period of debility. The third era is characterized as the day of "intestinal autointoxication," when the belief in economy in nutrition prevailed, and protein came into disrepute. The outstanding protagonist of this theory was the noted physiologist R. H. Chittenden, in the early 1900's. The lack of scientific basis for this theory was one factor in discrediting it, for no control groups had been used to substantiate the published arguments that a low protein intake made for improvement of health, and furthermore the time period was entirely too short.

Animal experiments reported by E. V. McCollum and N. Simmonds and the actual experience of Vilhjalmur Stefansson in subsisting for long periods on an exclusive meat diet played important parts in ending acceptance among scientists of the belief that it was wise to subsist on a low

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Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, A. R. Greenleaf, Charles L. Bernier, and Dwight C. Aten. Editorial Assistants: Mary F. Roberts and B. Beam.

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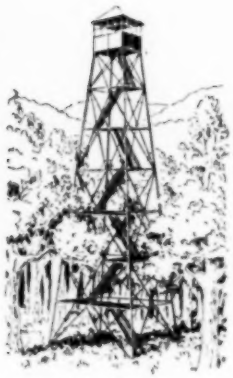


The Consumers' Observation Post

COMPLAINTS THAT NYLON STOCKINGS disappear right off the legs of their wearers make newspaper headlines from time to time. The latest report to this effect has come from Jacksonville, Fla. Actually, as it turned out on investigation, something in the atmosphere caused threads of nylon hose to break and numerous runs resulted. Similar difficulties have been reported in Philadelphia, Washington, D.C., and Minneapolis. According to Chemical and Engineering News, it is not yet clear just what was present in the atosphere to cause the difficulty, but a similar phenomenon was observed when girls at American Cyanamid's Calco plant walked through steam in which there was some sulfuric acid. The DuPont Company, the magazine reports, has found that such damage can also occur when women walk close to an automobile exhaust (the discharge from which also contains moisture and acids).

* * *

CANDY, if children must have it, should be eaten as dessert and not as a snack between meals, advises Dr. Eugene J. North of the University of Buffalo School of Dentistry. Dr. North predicts that 90 percent of dental decay could be eliminated by stopping the consumption of refined sugars, and he also went on record as favoring the complete elimination of soft drinks.

* * *

THE JUKE-BOX may be the deciding factor in determining whether Victor's new 7-in. 45-rpm. vinylite records win public acceptance over Columbia's 33-1/3 rpm. Long Playing records, suggests an editor of FM and Television magazine. It appears that juke-boxes are effective sales-promoters of records. They cannot use the Columbia Long Playing records, because the latter do not use up nickels fast enough, but they can use the 45-rpm. Victor disks. It is somewhat ironical that lovers of good music may have their choice of method of reproduction of music determined by the operations of a device that most of them have roundly cursed.

* * *

SOAP and the new synthetic detergents have cleansing properties, but, for use on the body, soap is considered the more desirable. The reason, as described in a little item in Chemical Abstracts, is that soap not only cleanses but also lubricates the skin, probably by depositing a unimolecular film of free fatty acid.

* * *

WIDESPREAD INTEREST OF CONSUMERS IN TELEVISION SETS will have a depressing effect on sales, chiefly in the automobile and apparel industries, predicts a television executive. On the basis of surveys made in the New York area it is expected that the average family will soon be spending $100 a year for television against the $400 it now spends on an automobile and $40 for attending motion pictures. No doubt the reasoning is that if people stay home and watch television programs they won't want a car to go places nor will the little woman need so many outfits — or will she?

* * *

WILD MUSHROOMS, considered a great delicacy, are also a frequent cause of food poisoning and even death. Only the professionally-trained expert should be relied on to gather a basket of edible mushrooms in meadow and woods. An interesting article by Professor J. A. Herrick, Kent State University, on the subject, discusses some common fallacies which people have relied on to make a safe selection. Both edible and poisonous mushrooms of a certain age, reports Professor Herrick, will blacken a silver spoon placed in the cooking pan with them. There is no scientific basis for the belief that an onion cooked with wild mushrooms will turn black only if the mushrooms are poisonous. Certain

varieties of poisonous and edible wild mushrooms alike have caps that peel easily, grow on wood, have milky sap, pink gills, stalks, and grow in "fairy-ring" formation. Wild animals have been known to eat the poisonous variety with fatal results. Never taste a wild mushroom to determine whether it is safe to eat, for in some varieties, as Professor Herrick points out, the toxin is so potent that a small nibble may be your last. Before anyone begins to eat the less familiar forms of wild mushrooms, he should spend not less than two years in extensive study of them, according to one authority quoted. The best advice for the novice would appear to be DON'T EAT WILD MUSHROOMS!

* * *

SHORT-SLEEVED SHIRTS, open at the neck, without ties, may not be elegant, but they are just what the doctor ordered. Dr. Victor G. Heiser, medical consultant to the National Association of Manufacturers, last year reported that male office workers would be healthier if they dressed in this fashion during the hot summer months.

* * *

AT THE HOME BUILDERS SHOW in Chicago early this year a shrewd observer was impressed with the attractiveness of the building materials and appliances on display, but he was annoyed at the prices. The newspaperman who accompanied him, despite the fact that the show was for the trade only, reported that he kept asking various exhibitors why somebody didn't make something just as good and sell it for a little less. Nobody paid much attention until one plant manager finally admitted that his company had a cheaper line of appliances ready, but not yet on sale. As the newpaper wisely pointed out, the building material industry apparently needs at least a slight touch of deflation to stimulate low-cost production. It had better begin to wake up to the fact that consumers can't and won't pay present prices.

* * *

SOMETHING NEW IN FURNITURE has been developed by the Armour Research Foundation in the mass-production field. By using beaten wood pulp accumulated on a screen shaped like the back and seat of a chair, built up to the proper thickness, then dipped in a resinous solution, and cured in an oven, it is possible to produce combination chair backs and seats in one piece. The resulting product can be made into a complete chair by fastening it to a one-piece metal leg unit. It is quite strong. Made on a mass-production basis, it should be considerably lower in price than chairs made by more conventional methods and serve well enough where utility rather than beauty is the prime problem.

* * *

NYLON UNDERWEAR is finding increasing favor over rayon garments, in the opinion of one lingerie manufacturer. Reasons for the shift are that nylon garments dry in two hours instead of 24 hours, and they do not need to be ironed. One thing the gentleman forgot to mention is the high price of nylon garments, which cost considerably more than rayon. Also nylon slips are reported to be unsatisfactory because they are apt to ravel at the seams.

* * *

QUALITY STANDARDS for the new canned frozen orange juice are expected to be considered soon. Producers are waiting to see how popular the new product is with consumers before making formal application for a hearing to set up minimum quality standards, according to a U.S. Department of Agriculture spokesman. The frozen juice is made by concentrating fresh orange juice to about one-sixth of its normal volume. Since some of the original flavor is lost, the concentrate is mixed with an equal volume of fresh juice and then frozen. When it is ready to use, it is diluted according to directions. Those who have tried various brands now on the market report that it is very acceptable, particularly when oranges are expensive or in places where fresh oranges of good quality are not available.

* * *

HOW TO KILL INSECTS without injuring people is a problem confronting scientists. It is especially urgent at the present time because of the recent development of extremely potent insecticides, two of which are claimed to be several times as potent as DDT. The Council on Pharmacy and Chemistry of the American Medical Association is waging a vigorous campaign to secure

(The continuation of this section is on page 27)

AUTOMOBILES FOR 1949

Editor's Note: *This is the first of a series of reports on the 1949 automobiles. Each month as many individual cars as possible will be reported until all the more important models have been covered. At that time, comparative ratings in tabular form will be presented. The ratings which are being assigned the cars reported upon in the several articles must be regarded as tentative and subject to change when fuller data are in and have been studied and checked, for any report which is given while a new model car is still "young" must be subject to change as experience and knowledge of the car in use accumulate.*

CR's reports on 1949 model automobiles are not based on exhaustive tests (which could not in any case have been carried out in time for the information to be useful to our subscribers), but on the opinions of several well-qualified engineers, supplemented by a careful study of specifications and reports of performance in the field.

WHILE careless assembly and similar problems still continue to plague both manufacturers and dealers, some improvement in the workmanship on automobiles has been noticed in recent months, and during the year 1949 the cars produced should show further change for the better. Manufacturers will do well to recognize that in the coming competitive period, carelessness of manufacture and inspection are going to make serious problems for dealers. Automobile users are prone to assume that faults which they find in one car will not be in another of different make; thus owners who find a car unsatisfactory because of faults of detail and inspection, are very likely to switch to another make, and when they do so, the manufacturers will have lost a slice of good will. A thing that most consumers forget, however, is that difficulties due to poor assembly and inspection have occurred in *virtually all makes* of cars, and, for this reason, the car buyer who has switched to another make may not in fact be better off than he was.

A further indication that all cars should be better in 1949 than at any time since before World War II is that immediate delivery of some "makes" may now be had, and several others may be had with only a few weeks' delay. The president of one automobile company recently predicted that, within a short time, practically any make or model of car could be purchased on short notice. Once active competition has been restored to this industry, consumers may expect that cars will come through from the factories showing evidence of much more careful manufacture and assembly than during the past several years.

With car production ahead of demand, as it now is with some makes of cars, CR subscribers will want to keep in mind the fact that it will be the better part of wisdom to buy only cars of makes whose manufacturers are operating on a sound financial basis and are thus in a position to increase manufacturing efficiency or even to operate at a loss for a time, as competitive conditions develop again in the industry.

With the price of what were formerly low-priced cars now moved up into the range of $1600 to $2000 (delivered price with taxes paid), both car buyers and car manufacturers feel that the permissible upper price limit has about been reached. However, since automotive industry employees do not seem likely to accept wage decreases, reduction of prices of automobiles is probably to be achieved only by decreasing the number of man-hours required to build the cars — or by producing smaller or lighter cars with fewer refinements and fewer items of equipment. There are few industries whose sales are as sensitive to price changes as the automotive industry.

Several car manufacturers are attacking the price problem along both these lines. Operations that were formerly time-consuming, inspection for instance, are being carried out by automatic means. New manufacturing machinery is being used to increase production efficiency. New foundries, blast furnaces, etc., have been under construction to reduce costs of castings and eliminate shortages of desired materials. While none of the large car manufacturers are producing smaller or less luxurious models at this time (something to sell at not far above the pre-war price of the *Ford-Chevrolet-Plymouth* class), special "cut-price," simplified cars are known to have been under consideration for many months. Certainly if production catches up with the demand in the so-called low-price field, cars selling at lower prices will become available; nevertheless it is not expected that full-size cars equipped as are those of today will show any very large price decline during the present year.

It is a matter for regret that the pontoon-side type of body is to be continued by all makes, as is evident from the public showings and information available through the trade press. (There will be some slight modifications as noted later.) Two body contours will be available with several makes, the so-called "notch-back" and "fast-back" types. The former is the type wherein the top curves sharply downward at the rear window, and a notch or angle is formed between the top and rear

Studebaker Land Cruiser

deck. "Fast back" refers to the type wherein the top continues back over the rear deck in a single curve of more or less streamline character. From the standpoint of vision toward the rear (which is vitally important for safety), the "notch-back" is very much to be preferred. General Motors cars feature both types of bodies, while other companies have adopted one or the other type, and may have either available.

Some makes of cars have a very objectionable feature in that the pontoon side of the body is so shaped as to put the widest part of the car at the center section rather than at the front fenders. Scraping of the body sides is therefore more than normally likely to occur when one is in a tight spot, a serious matter, considering the expensive damage to the sides and body that will occur if the contact is more than a small fraction of an inch (in spite of the metal protection strips that are being provided on most cars).

Cars of the Chrysler group are provided with fenders which can be unbolted from the rest of the body. This change materially alleviates the almost intolerable situation existing with the many 1948 cars whose bodies remain the same for 1949. It is well known that body repair shops have had a "field day" in making repairs to 1948 pontoon-side bodies, not only because the fenders were integral with the body, but because of the difficulty of getting access to the inside surface of the fender portion of the body, which often required to be worked on when a dent in the outside surface was to be removed.

In the effort to minimize costs, the over-all weights of cars for 1948 and 1949 have been reduced in several cases. This has obviously called for removal of metal from various parts of the car, since the manufacturer has attempted still to provide the "large-car appearance" which the average car buyer is said to demand. The weight reduction has been achieved by redesign of chassis frames and body pillar sections. While it is a sound idea to eliminate any waste metal in all possible parts of the car, it is probable that this process is being carried too far, for reports from body repair shops indicate that the thicknesses of some body panels and fenders have been so reduced that straightening these parts after damage is extremely difficult and costly. In the process of making the surfaces smooth after an accident, much lead filling has to be used, and more "body putty" is used than ever before, so that the saving of weight at best would not be effective in all cases. In most cases where thicknesses have been reduced, material of higher quality has been used, but even so it is doubtful if the "crash strength" of many of the new bodies is equal to that provided in cars produced prior to the war, especially since glass areas have been increased to assure greater driver vision. It is our view that the measures the manufacturers have taken in holding down costs, to keep fuel economy from being too poor, and to improve drivers' view of the road, have significantly reduced the ability of today's cars to stand abuse and collision damage.

Studebaker Regal De Luxe 4-Door Commander

Most makes of cars today are so much alike in basic features of mechanical design, as distinguished from style, that as a rule only details of design serve to give the engineer information which can be translated into terms of merit and into judgments of the value of one make or model compared with another. With a very few important exceptions, all full-sized cars today possess the following features, to mention a few: Independent coil front springing, longitudinal rear leaf springs; shallow vertical section double-drop chassis frame; Hotchkiss drive with exposed propeller shaft; hypoid rear axle gears, hydraulic braking, unit power plants, six and eight cylinder engines (with one exception), sealed-beam headlamps, and other features which have prevailed for some years.

Only in the realm of special equipment, whether standard or optional, are there very noticeable differences. Here, too, such differences may be rather technical in character, as for instance in the differences between the various types of automatic transmissions, as described in the January 1949 issue of CONSUMERS' RESEARCH BULLETIN.

There are some who would make the problem of rating cars a very simple one; they tend to assume that the ratings can be based upon comparison of the "specifications" of various models as tabulated in trade journals read in the industry. This kind of information is of great value, but it does not itself constitute a concrete basis for comparative ratings, which can be established only by a knowledge of the types of materials used, proportions and sizes of various parts of the vehicle in relation to each other, horsepower, gear ratio, etc., in relation to the size and weight of the car, and numerous other factors which can be judged effectively only by experienced automotive engineers. The problem becomes the more difficult as cars be-

come more nearly alike in their major mechancial characteristics, and there are this year for the first time in many years, indications that car manufacturers are beginning to realize they have made their cars so much alike that car buyers have little or nothing to select from other than body size and style, fitments, radiator grille, color, and similar appearance factors — and that they are buying accordingly. In the future, the influence of the body and equipment stylists may be considerably less than in the past several years. Cars may eventually become individualized again and the engineers may again be given an opportunity to apply far more in the way of basic new developments than they are permitted to today, and at the same time to adopt, for the benefit of the adult population, features that make for convenience, good lasting qualities, and accessibility for repair, rather than "flash" and dashing appearance.

General Motors Body Types

Before describing various makes of cars individually, it should be noted that General Motors for some years has been and is now producing three types or series of bodies known as the "A," "B," and "C" types. This does not mean that there are but three body styles, but that in assembling various bodies for the various "makes" of GM cars, parts made with three sets of dies may be used in building up the final body. For selling purposes, different fenders, grilles, trim, etc., are used with a given body shape to give the different cars in the General Motors line some degree of distinction in appearance. Consumers should bear in mind that an "A," "B," or "C" type of the previous year may be continued, while a new type is also in production; because of manufacturing problems, not all types are "revised" at the same time. New "A" bodies have just been designed for the 1949 *Chevrolet* cars. This same body is also being applied to other "makes" in the General Motors line.

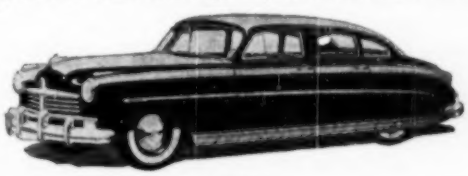
Probably very few consumers recognize that, when they buy a General Motors car or some other make in the high-priced bracket, they may not actually be getting a bigger body at all, but within narrow limits, have available the same interior seating space, seat width, etc., as in a lower-priced car of the same line. They *will* get a longer wheelbase, a longer and more imposing hood (if they care for such features), and more luggage space; very likely better upholstery and appointments, trim, and body finish; yet *the space available inside the body will be about the same as on some lower-priced models*, a fact which some of the more frugal members of the family may wish to keep in mind in making their selection.

The practice which has been described with respect to General Motors body types is not, of course, limited to the GM cars. Other manufacturers show exactly the same approach to the problem by seeking to provide some degree of diversified appearance without an extensive increase in manufacturing costs. Their reasons are good ones, for the dies for stamping out body parts of a single model cost well over two million dollars. In principle their position seems sound so long as the consumer is willing to be guided by trivial rather than significant differences, and if sufficient room is provided in a car, many purchasers are doubtless well satisfied. Naturally the size of the occupants does not change with an increase in the size of the body, so that in practice about all one gets in a bigger car in so far as the body is concerned is the appearance of extra size.

Design Defects

Our appraisal of the 1949 crop of automobiles leads to the impression that their designers have tried, as it were, to evolve cars which would be as expensive and difficult to repair as possible, hard to park, difficult to enter and get out of, or sit in if wearing a hat. On top of these difficulties, which are serious enough, there are imposed typically poor vision of the road and of cars behind, and numerous other faults which go against safety and ease of upkeep. The designers or stylists who have developed the new cars have not, of course, brought about these results deliberately, but they have copied one another to such an extent that comfort, including easy riding qualities, has been vastly improved; this has been at the expense of driving control (steering) and safety against great damage in collision. Safety to car owner and others on the road has been sacrificed to a very great degree. Today's cars are thus in several respects inferior to cars of several years ago, however much they may be improved from the standpoint of the individual manufacturer's and dealer's idea of appearance.

The statement universally heard in trade sources that present designs are *what the customers want* is in no wise convincing, for consumers are not asked what sort of designs they want, as respects the real essentials of car characteristics and behavior on the road. Dealers universally take the position that anything that makes a car look different is a fine thing, because it makes last year's car look like last year's car so definitely that people who are forever wanting things to be new and different rather than good and reliable are quickly rendered dissatisfied



Hudson

with the car which they have—not because it isn't good, but because it doesn't represent the latest thing in body style.

This year's bulbous bodies, wider at the center than at the front, vulnerable to the slightest scrape or bump on the side, have little to recommend them, except that they provide greater seat width and are different in appearance from cars offered in earlier years. Elimination of running boards has increased the danger and extent of damage to a car struck amidships or on its side, for the running board served a very useful purpose in absorbing a considerable portion of the impact in the event of a crash or a minor side bump. It could be repaired easily and at relatively small cost. Now the manufacturer either has to give up his present body design or develop side bumpers as a partial solution. Whether the designer can reconcile addition of side bumpers with his queer — and dangerous — ideas of beauty in automobiles is another problem.

The following are considered to be some of the outstanding defects of this year's crop of new cars. (To a considerable extent, they likewise characterize the 1948 models also.)

1. *Difficulty of inspecting and servicing tires and applying chains.* Fenders with "pants" which cover a large portion of the tire and wheel not only make tire changing difficult, but cover up the tire valve so that oftentimes it may require several movements of the car, with attendant needless risk to persons concerned, to bring the valve stems to a position at the bottom of the wheel where they are accessible. Because of this nuisance and the time involved, drivers will tend to check tires less frequently than they should; this, combined with the special inflation problem of the new E.L.P. tires now offered on practically all cars, introduces a serious problem. Its chief effect will be to shorten tire life considerably, for the new tires are extremely sensitive to small errors in air pressure, as compared with the old tires which operated at considerably higher pressures. Likewise the new "wheel pants" encourage car users to drive without applying chains, even when chains are vitally necessary, under bad road conditions. Anyone who designs a car so that application of chains is difficult, or discouraged, must accept a heavy burden of responsibility for injuries and loss of human life in winter accidents. Shrouding the rear wheels has made tire changing an almost unsurmountable task except under ideal conditions (dry level road, etc.), and *with a good jack*. The majority of the so-called jacks provided with the cars are either practically useless or unsafe to use. Women, we feel, or persons who are not in robust health, had best not attempt to change a tire at all with the jacks furnished with most of today's cars.

2. *Lack of headroom and low seats.* While bodies are wider, lack of height above the seats prevents a person who is six feet tall, or thereabouts, from wearing a hat in many of the cars, or sitting comfortably on the rear seat at one of the side positions. Lack of room around and behind the steering wheel of some cars interferes with proper and safe operation of the controls, especially for tall men and women. This has been particularly serious with some of the big-selling higher-priced cars, which have sacrificed this and other elements of comfort to racy appearance. Seats are so low in some cases that the driver's vision is greatly reduced by the hood, which is too high on all cars of standard size. (Comments in listings regarding good vision over hood means, of course, *relative to other makes*.)

3. *On some bodies, the rear windows have such a slant as to be almost horizontal.* Thus they quickly collect snow and sleet, and make driving under winter conditions not only difficult, but extremely hazardous for both the occupants of the car and those of the following car. The rear window cannot be kept clear for even a few minutes when snow is falling or ice is forming.

4. *Road clearance.* The idea of providing considerable road clearance so that one can get off paved highways safely has been entirely forgotten. None of the newer cars have adequate road clearance for driving in rutted country roads or in snow or mud. The millions of persons who have real need to drive on back-country roads under difficult weather and road conditions are almost forced to look backward to cars of the *Model A Ford* era in order to get what they require for reliable bad-weather, bad-road driving.

5. *Lack of standardization of bumpers and bumper guards makes interlocking of bumpers in the case of a minor accident a very common occurrence.* Moreover, the design of the massive-looking bumper guards protruding forward and rearward from both bumpers increases rather than reduces the severity of damage in a collision, for such gross protuberances prevent the bumpers of cars which strike from sliding against each other; thus the energy is dissipated in crumpling the two cars longitudinally instead of in tossing one car or the other to the side, as might otherwise occur. Bumpers are now set so close to the car body that they no longer function to reduce body and fender damage produced by slight collisions.

6. *The spare tire in several makes of cars is hidden in the innermost recesses of the trunk*, making it necessary to unload the entire contents of the trunk to get at the tire, which can be extremely troublesome in case of a heavy storm. The stylists who favored this condition should be condemned to pile new luggage of their own onto a muddy road in a driving rain at night, preparing to shift a tire hidden under "wheel pants" that make the tire almost unchangeable except under favorable conditions of a dry, heated garage.

7. *Numerous reflecting surfaces which catch light and interfere with the driver's vision are in evidence in many of the cars*, although the simplest knowledge of physiological optics should have taught automobile designers that this is the worst thing that could be done to interfere with safe driving under difficult light conditions.

8. *The slow-acting steering gears* with very high steering ratios, to provide easy turning when the car is standing or being parked, are a definite hazard; when quick steering action is necessary, as in pulling out of a skid or other extreme emergency, it is simply not possible to move the front wheels fast enough with the high ratio of reduction.

According to an article in the Journal of the American Medical Association, the most dangerous seat in the automobile is that alongside the driver. Occupants of this seat are injured in the proportion of about three to one as compared to drivers, by being thrown against the instrument panel. Although this revealing study of automobile injuries was published on May 22, 1948, it would appear that only one manufacturer's engineering experts have seen fit to consider it in their design. Chrysler has introduced a crash-cushion of leather-covered sponge rubber along the top of the instrument panel (but has not eliminated protruding knobs and sharp edges). There are many important steps that might be taken to save passenger-car users from death, or serious injury and disfigurement in case of accident. Many of these changes would cost little; some would not add any expense in manufacture.

It is to be hoped that some manufacturer will have the courage to offer at least one car in his line in which defects outlined, and other defects which all the manufacturers know about but up to now have done nothing with, have been eliminated. It is doubtful whether any such change will take place unless and until customers express themselves clearly and firmly to automobile manufacturers. Don't bother about the dealer; he is concerned with *selling* cars, not with designing them properly, and his influence in so far as it is exerted at all on the matter of car design, tends to favor constant innovation and novelty, more chrome plating, more expensive and vulnerable grillwork, and more bumper knobs and other needless and unsafe protuberances. Generally speaking, the dealer does not think in terms of either safety or economy of operation, nor does he think these are factors that should concern you, the owner. It is high time that some manufacturer or several manufacturers took automobile design out of the hands of stylists and gave it to engineers, and preferably to engineers who have had the misfortune to be in an automobile accident themselves or had a member of their own family injured in one, and who can thus see how many large and small defects in design and details may contribute to a crucial failure in an emergency.

Tires

Extreme-low-pressure tires have been accepted by the various manufacturers of standard-size cars and are now either regular or optional equipment on practically all makes of cars. Numerous complaints have been received of low mileages (4000 to 10,000 miles), obtained with E.L.P. tires, as compared with regular-pressure tires. Some of the tire manufacturers attribute this chiefly to underinflation, and for this they themselves appear to be largely responsible, for they have failed to make it clear (at first, perhaps, did not appreciate it themselves) that the 24-pound pressure almost universally recommended for these tires is a *minimum* pressure which is to apply only when the tire is cold, or at normal atmospheric temperature. When a tire has been driven, it will be much warmer, from the energy dissipated in flexing, braking, road friction, etc. If under this preheated condition the tire is inflated to 24 pounds, its pressure, when it has cooled off to the temperature of its surroundings, may be about 20 pounds, corresponding to an amount of underinflation and overloading which can be very serious in the E.L.P. tire as compared with the "standard pressure" tires working in the pressure range of 28 to 30 pounds. E.L.P. tires when in the warm condition after a drive of some distance at good speed should be at a minimum pressure of 28 pounds, and if very warm on a summer day, and after hard driving, even a higher pressure will be in order. Thus *it is important not to bleed air from a hot tire to reduce its pressure to that normal for a cold tire.* Air pressure of all tires should be checked at least once a week, or oftener if the car receives considerable use; some of the new car designs have made this difficult and time-consuming because of the inaccessibility of the tire valve. (See "Design Defects.") Use an accurate pressure gauge and follow latest information *from the tire manufacturer* on the correct inflation pressure. (Don't trust service station gauges, which may be in error by as much as plus or minus 4 lb.)

E.L.P. tires are more susceptible to damage by uneven wear than standard tires; the positions of the tires should be changed by switching frequently (at least every 3000 to 5000 miles) if maximum mileage is to be obtained. Rear tires, when moved to the front, should be balanced.

Front wheel alignment is of particular importance with E.L.P. tires, for improper alignment, which can be caused by even a moderate sidewise bump against a curb or other obstacle, can result in excessive and uneven wear. (Steering geometry, as it is called, may even be grossly

incorrect on brand-new cars.) Common symptoms of misalignment are excessive wear on one side of the tire, or feather edges or cups on the part of the tread that makes contact with the road surface.

Many subscribers have noted that low-pressure tires have a tendency to skid much more readily on wet pavements and on snow and ice than regular tires; however, the opinions on this are somewhat conflicting up to the present time. Subscribers who have had long driving experience on difficult road surfaces are invited to write CR on their own experience and judgment in this regard.

The figures given in the listings for *brake factor* are indicative of the probable life of the brake linings and are obtained by dividing the total area of the brake linings in square inches by the "shipping weight" of the car plus 750 lb. (450 lb. for 4-passenger cars). *Performance factor* is a measure of the relative ability of the car to respond quickly and powerfully when the accelerator pedal is depressed. This figure is obtained by dividing the maximum horsepower of the car by its shipping weight plus 750 lb. (which represents the average added load in cars of normal size, for five passengers), and multiplying the result by 1000 (to avoid fractional numbers). The larger the resulting number, the higher the relative "performance." It should be noted that this method of judging a car assumes that the gear ratio and tire size have been adjusted by the manufacturer's engineers so that maximum car speed occurs at an engine speed just a little above the speed at which maximum horsepower is developed.

Listings of *Packard* cars refer to the 1949 *22nd Series* models. *Golden Anniversary Packards* were announced just as this material was being prepared for the printer, and hence could not be included in this compilation, for lack of time to complete the analysis. These cars will be reported upon as soon as our study of the data regarding them can be completed.

A

Packard Custom 8. $3750 f.o.b.; $3840 delivered N.Y.C. Engine: 8 cylinder, L head, 3½ in. bore x 4⅝ in. stroke; 356 cu. in. displacement; 160 hp. at 3600 rpm.; taxable hp., 39.2; compression ratio, 7.0 to 1. Engine oil capacity, 7 qt.; cooling water, 20 qt., plus 2 qt. for heater; gas tank, 20 gal. Gear ratio, 3.92 to 1 (2.95 to 1 with overdrive). Battery, 17-plate, 120-amp.-hr. (adequate). Wheelbase, 127 in.; over-all length, 213 in.; width, 77½ in.; height, 64 in. Tire size, 8.20 x 15 (adequate). Braking area, 208 in.; brake factor, 42. Cable-type hand brake subject to freezing. Road clearance: 7½ in. in front; 7¾ in. in rear. Foamed rubber cushions standard equipment. Seat widths: front, 57½ in.; rear, 50½ in. Insufficient headroom at rear for tall persons. Performance factor, 33. Reported performance: in city driving, 12 to 14 m.p.g.; in country driving, 14 to 16 m.p.g. Vision over hood, good. Accessibility of spare tire, very poor. Trunk space, small. Had heavy "X" frame but vulnerable to costly side damage. Undercoating is recommended. Directional signals standard equipment. This car is also available with 149-in. wheelbase. Shipping weight, 4175 lb.

Packard Super Eight. $2827 f.o.b.; $2910 delivered N.Y.C. Engine: 8 cylinder, L head, 3½ in. bore x 4¼ in. stroke; 327 cu. in. displacement; 145 hp. at 3600 rpm.; taxable hp., 39.2; compression ratio, 7.0 to 1. Engine oil capacity, 6 qt.; cooling water, 20 qt., plus 2 qt. for heater; gas tank, 20 gal. Gear ratio, 3.9 to 1 (2.96 to 1 with overdrive). Battery, 15-plate, 100-amp.-hr. (inadequate). Wheelbase, 120 in.; over-all length, 205 in.; width, 77½ in.; height, 64 in. Tire size, 7.60 x 15 (slightly overloaded). Braking area, 171.5 sq. in.; brake factor, 37. Hand brake subject to freezing in cold weather. Road clearance, 7½ in. front, 8½ in. rear. Insufficient headroom at rear for tall people. Performance factor, 31. Reported performance: in city driving, 13 to 15 m.p.g.; country driving, 15 to 18 m.p.g., 20 to 21 m.p.g. with overdrive. Foamed rubber cushions standard equipment. Seat widths: front, 57½ in.; rear, 50½ in. Vision over hood, good. Accessibility of spare tire, very poor. Trunk space, small. Had heavy "X" frame but vulnerable to side damage, effect of which would be costly. Undercoating is recommended for this car. Direction signals standard equipment. This car is also available with 141-in. wheelbase. Shipping weight, 3855 lb.

A–

Packard Eight. $2275 f.o.b.; $2382 delivered N.Y.C. Engine: 8 cylinder, L head, 3½ in. bore x 3¾ in. stroke, 288 cu. in. displacement; 130 hp. at 3600 rpm.; taxable hp., 39.2; compression ratio, 7.0 to 1. Engine oil capacity, 6 qt.; cooling water, 18 qt., plus 2 qt. for heater; gas tank, 17 gal. (somewhat small). Gear ratio, 3.9 to 1 (2.96 to 1 with overdrive). Battery, 15-plate, 100-amp.-hr. (adequate). Wheelbase, 120 in.; over-all length, 205 in.; width, 77½ in.; height, 64 in. Tire size, 7.60 x 15 (slightly overloaded). Braking area, 171.5 sq. in.; brake factor, 37.5. Hand brake subject to freezing in cold weather. Road clearance, 7½ in. front, 8½ in. rear. Insufficient headroom at rear for tall people. Performance factor, 28. Reported performance: in city driving, 14 to 17 m.p.g.; in country driving, 16 to 19 m.p.g. Foamed rubber cushions available only for de luxe models at extra cost. Seat widths: front, 57½ in.; rear, 50½ in. Vision over hood, good. Accessibility of spare tire, very poor. Trunk space, small. Had heavy "X" frame, but vulnerable to side damage, effect of which would be costly. Undercoating is recommended for this car. Shipping weight, 3815 lb.

B+

Frazer Standard. $2395 f.o.b.; $2563 delivered N.Y.C. Engine: 6 cylinder, L head, 3-5/16 in. bore x 4⅜ in. stroke; 226.2 cu. in. displacement; 112 hp. at 3600 rpm.; taxable hp., 26.3; compression ratio, 7.3 to 1. Engine oil capacity, 5 qt.; cooling water, 13½ qt., plus 1¼ qt. for heater; gas tank, 21 gal. Gear ratio, 4.09 to 1; 2.99 to 1 with overdrive. Battery, 15-plate, 100-amp.-hr. Wheelbase, 123½ in.; over-all length, 208 in.; width, 73 in.; height, 64½ in. Tire size, 7.10 x 15

(adequate). Braking area, 175.7; brake factor, 43. Hand brake subject to freezing. Road clearance: 7 in. in front, insufficient; 7¾ in. in rear. Foamed rubber cushions standard equipment. Seat widths: front, 62 in.; rear, 62½ in. Performance factor, 27. Reported performance: in city driving, 17 to 19 m.p.g.; in country driving, 18 to 20 m.p.g., 24 m.p.g. with overdrive. Vision over hood, relatively not good. Front fender replacements cost $40 to $45, plus labor. Rear fender is part of body, making repairs or replacement very expensive. Turn indicator standard equipment. For other comments, see *Kaiser Special*. The *Frazer Manhattan* is merely a "de luxe" model of the *Frazer*. Shipping weight, 3332 lb.

Hudson Super 6. $2222 f.o.b.; $2296 delivered N.Y.C. Engine: 6 cylinder, L head, 3-9/16 in. bore x 4¾ in. stroke; 262 cu. in. displacement; 121 hp. at 4000 rpm.; taxable hp., 30.4; compression ratio, 6.5 to 1; 7.0 to 1 optional at extra cost. Engine oil capacity, 7½ qt.; cooling water, 18 qt.; gas tank, 20 gal. Gear ratio, 4.1 to 1 (4.55 optional). Battery, 17-plate, 120-amp.-hr. (fully adequate). Wheelbase, 124 in.; over-all length, 208 in.; width, 77 in.; height, 60 in. Tire size, 7.10 x 15 (overloaded 9%); 7.60 x 15 optional (adequate). Braking area, 158 in.; brake factor, 37. Cable-type hand brakes, which may lock in freezing weather. Road clearance: 8 in. in front; 6½ in. in rear (inadequate). Foamed rubber cushions standard equipment. Seat widths: front, 62 in.; rear, 63 in. Insufficient headroom at sides of rear seat for tall persons. Floor is lower than bottom of door opening, making it difficult to enter or leave car. Rear window of *Herculite* glass (undesirable). Performance factor, 28. Reported performance: in city driving, 17 to 19 m.p.g.; in country driving, 18 to 20 m.p.g. Very strong, one-piece welded body-frame construction. Vision over hood, good, but poor vision through rear window in inclement weather. Very vulnerable to side damage particularly from high curbs, etc., in parking. Though fenders are of the type that are bolted on, replacement will be very expensive. The desirable combination hydraulic and mechanical (reserve) brakes are continued. Accessibility of spare tire, poor. Trunk space, small. Rear wheels and tires not readily accessible for servicing. Undercoating is desirable for this car. Car has excellent pickup and reserve power. *Commodore* models are essentially the same, except for extra accessories and de luxe fittings. Essentially a good car but relatively high priced, and poor reputation of earlier *Hudsons* is likely to mean rather low turn-in values. Shipping weight, 3555 lb.

Hudson Super 8. $2343 f.o.b.; $2590 delivered N.Y.C. Engine: 8 cylinder, L head, 3 in. bore x 4½ in. stroke; 254 cu. in. displacement; 128 hp. at 4200 rpm.; taxable hp., 28.8; compression ratio, 6.50 to 1; 7.0 to 1 optional at extra cost. Engine oil capacity, 7 qt. (to refill); cooling water, 18 qt.; gas tank, 20 gal. Gear ratio, 4.1 to 1 (4.55 to 1 optional). Battery, 17-plate, 120-amp.-hr. Wheelbase, 124 in.; over-all length, 208 in.; width, 77 in.; height, 60 in. Tire size, 7.10 x 15 (overloaded 9%); 7.60 x 15 optional (adequate). Braking area, 158 in.; brake factor, 37. Performance factor, 30. Reported performance: in city driving, 15 to 17 m.p.g.; in country driving, 16 to 18 m.p.g. For general comments, see *Hudson Super 6*. Shipping weight, 3565 lb.

Kaiser Special. $1995 f.o.b.; $2066 delivered N.Y.C. Engine: 6 cylinder, L head, 3-5/16 in. bore x 4¾ in. stroke; 226 cu. in. displacement; 100 hp. at 3600 rpm.; taxable hp., 26.3; compression ratio, 7.3 to 1. Engine oil capacity, 5 qt.; cooling water, 13½ qt., plus 1¼ qt. for heater; gas tank, 21 gal. Gear ratio, 4.09; 2.9 with overdrive. Battery, 15-plate, 100-amp.-hr. (adequate). Wheelbase, 123½ in.; over-all length, 206½ in.; width, 73 in.; height, 64½ in. Tire size, 7.10 x 15 (adequate). Braking area, 175.7 sq. in.; brake factor, 44. Hand brake subject to freezing. Road clearance: in front, 7 in., insufficient; in rear, 7¾ in. Seat widths: front, 62 in.; rear, 62½ in. Insufficient headroom at sides of rear seat, due to sloping ceiling. Performance factor, 25. Reported performance: in city driving, 18 to 20 m.p.g.; in country driving, 20 to 22 m.p.g., 25 m.p.g. with overdrive. Vision over hood, poor. Accessibility of spare tire, very poor. Trunk space, large. Fender material of relatively thin gauge. Undercoating is recommended. Paint has good appearance except that it has tended to be "patchy" on some cars observed. Very little protection against side crash danger. Rear fenders are integral with body, making repairs expensive. Sharp edges of clock rim a definite hazard in the event of a sudden stop. A turn indicator is standard equipment. Shipping weight, 3271 lb.

Kaiser DeLuxe. $2195 f.o.b.; $2278 delivered N.Y.C. Engine same as *Kaiser Special*, except for increased hp. (112 hp. at 3600 rpm.), achieved by improved carburetion. Performance factor, 28. Foamed rubber cushions standard equipment. Most important changes are the increased power without sacrifice of economy, change in rear cross-member supporting engine to prevent scraping in ramps, etc., softer ride due to longer front coil springs, and better cooling. Shipping weight, 3271 lb.

Nash 600 Super. $1832 f.o.b.; $1956 delivered N.Y.C. Engine: 6 cylinder, L head, 3⅛ in. bore x 3¾ in. stroke; 172.6 cu. in. displacement; 82 hp. at 3800 rpm.; taxable hp., 23.4; compression ratio, 7.0 to 1. Engine oil capacity, 5 qt.; cooling water, 15 qt.; gas tank, 20 gal. Gear ratio, 4.4 to 1. Battery, 13-plate, 90-amp.-hr. (considered inadequate). Wheelbase, 112 in.; over-all length, 201 in.; width, 77½ in.; height, 63 in. Tire size, 6 40 x 15 (adequate). Accessibility of spare tire, good. Trunk space of good size. Braking area, 132 sq. in.; brake factor, 36. Cable-type hand brakes which may become locked in freezing weather. Road clearance: 7¼ in. at front; 7¾ in. at rear (judged insufficient for rough country driving). Foamed rubber cushions available at extra cost, but are standard equipment on Custom models. Seat widths: front, 60½ in.; rear, 52 in. Seats can be adjusted to form beds, within the car; mattresses and screens are extra. Insufficient headroom front and rear for tall people. Rear and ventilator windows of *Herculite* (undesirable). Performance factor, 22 (low). Reported performance: in city driving, 21 to 23 m.p.g.; in country driving, 23 to 25 m.p.g., with overdrive, 28 m.p.g. Strong, one-piece welded girder body frame. Driver's vision over hood, good, but poor vision through rear window. Vulnerable to side damage particularly from high curbs, etc., in parking. Fenders of welded construction; replacement of fenders, one side, about $110 (high). All four wheels and tires not readily accessible for servicing; would be especially

difficult for a woman. Undercoating is desirable. Car performance somewhat sluggish in comparison to other cars in its class. Shipping weight, 2905 lb.

Nash Ambassador Super. $2279 f.o.b.; $2360 delivered N.Y.C. Engine: 6 cylinder, valve-in-head, 3⅜ in. bore x 4¾ in. stroke; 234.8 cu. in. displacement; 112 hp. at 3400 rpm.; taxable hp., 27.3; compression ratio, 7.0 to 1 (7.5 to 1 optional). Engine oil capacity 6 qt.; cooling water, 18 qt.; gas tank, 20 gal. Gear ratio, 4.1 to 1 (3.1 to 1 with overdrive). Battery, 15-plate, 105-amp.-hr. (adequate). Wheelbase, 121 in.; over-all length, 210 in.; width, 77½ in.; height, 63½ in. Tire size, 7.10 x 15 (adequate). Accessibility of spare tire and size of trunk, good. Braking area, 176 sq. in.; brake factor, 43. Hand brake subject to freezing in cold weather. Road clearance: 7¾ in. at differential; 7½ in. at lowest point front assembly. Foamed rubber cushions available at extra cost. Seat widths: 60½ in. front; 52 in. rear. Insufficient headroom front and rear. Heads of 6-ft. persons touch ceiling fabric in both front and rear seats. Rear window and ventilating windows of *Herculite* (undesirable). Performance factor, 28. Reported performance: 18 to 19 m.p.g. in city driving; 19 to 21 m.p.g. in country driving, 25 m.p.g. with overdrive. Strong steel-girder type body and frame. Similar to *Nash 600* in vulnerability to costly side damage and difficulty in servicing wheels and tires. Poor vision over hood and through rear window. Shipping weight, 3320 lb. Custom models similar to standard cars, except for added accessories, better upholstery, foam cushions, etc.

Studebaker Champion De Luxe. $1689 f.o.b.; $1759 delivered N.Y.C. Engine: 6 cylinder, L head, 3 in. bore x 4 in. stroke; 170 cu. in. displacement; 80 hp. at 4000 rpm.; taxable hp., 21.6; compression ratio, 6.5 to 1 (7.0 to 1 optional). Engine oil capacity, 5 qt.; cooling water, 11 qt.; gas tank, 18 gal. Gear ratio, 4.1 to 1 (3.19 to 1 with overdrive). Battery, 15-plate, 100-amp.-hr. (adequate). Wheelbase, 112 in.; over-all length, 192 in.; width, 69½ in.; height, 61¼ in. Tire size, 6.40 x 15 (adequate). Accessibility of spare tire, excellent; trunk space, adequate. Braking area, 148 sq. in.; brake factor, 42. Hand brake unduly exposed to road hazards. Road clearance: 8¼ in. at front; 7¾ in. at rear. Foamed rubber cushions available as an extra. Seat widths: front, 59¼ in.; rear, 49 in. (Insufficient headroom at rear.) Performance factor, 23 (low). Reported performance: city driving, 20 to 24 m.p.g.; in country driving, 24 to 26 m.p.g., and 28 m.p.g. in overdrive. Body construction shows no improvement over last year's, which was criticized from safety standpoint. (Vulnerable to side damage; windshield posts and side posts too light for good protection if car should turn over.) Vision over hood, good, but low location of rear view mirror undesirable since driver's vision is blocked by passengers in rear seat. Replacement cost of one fender estimated at $35 front, $40 rear, plus labor. Rear doors hinged at back (undesirable). These cars are essentially the same as the 1948 models, except for minor improvements. Shipping weight, 2745 lb.

Studebaker Commander De Luxe. $2019 f.o.b.; $2102 delivered N.Y.C. Engine: 6 cylinder, L head, 3-5/16 in. bore x 4¾ in. stroke; 245 cu. in. displacement; 100 hp. at 3400 rpm.; taxable hp., 26.3; compression ratio, 6.5 to 1 (7 to 1 optional). Engine oil capacity, 6 qt.; cooling water, 13 qt.; gas tank, 18 gal. Gear ratio, 4.1 to 1 (3.18 to 1 with overdrive). Battery, 15-plate, 100-amp.-hr. (adequate). Wheelbase, 119 in.; over-all length, 206 in.; width, 69½ in.; height, 61½ in. Tire size, 6.50 x 15 (overloaded). Braking area, 178 sq. in.; brake factor, 45. Hand brake unduly exposed to road hazards. Road clearance: 7¾ in. at front; 6¾ in. at rear (inadequate). Insufficient headroom at rear. Performance factor, 25. Reported performance: city, 19 to 23 m.p.g.; country, 22 to 24 m.p.g. Foamed rubber cushions standard equipment. Seat widths: front, 59 in.; rear, 49 in. Rear doors hinged at back (undesirable). For comments not covered above, see *Studebaker Champion*. Shipping weight, 3240 lb.

Studebaker Land Cruiser. $2328 f.o.b.; $2412 delivered N.Y.C. Engine same as *Studebaker Commander*. Wheelbase and over-all length, 4 in. more than that of *Commander*. Reported performance: city, 18 to 20 m.p.g.; country, 19 to 22 m.p.g., 24 m.p.g. in overdrive. Shipping weight, 3325 lb.

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Data on the following cars arrived too late to be presented in detail in this issue. For those subscribers who have immediate need for information about certain other cars, *tentative ratings* of 24 additional models are given.

Buick 50 Super	A–
Buick 70 Roadmaster	A–
Cadillac 61 875	A–
Chevrolet Styleline	B
Chevrolet Fleetline	B–
Chrysler Royal 6	A–
Chrysler Saratoga 8	A–
Crosley	B–
De Soto	A–
Dodge Meadowbrook	B+
Dodge Coronet	B+
Ford 6	A
Ford V8	A
Lincoln V8 121	A
Lincoln Cosmopolitan	A–
Mercury	A–
Oldsmobile 76	A–
Oldsmobile 98	A–
Plymouth P18	A–
Pontiac 6 Chieftain	A–
Pontiac 8 Chieftain	A–
Pontiac 6 Streamliner	B+
Pontiac 8 Streamliner	B+
Willy's 4 Station Wagon	B+

Please Note Particularly—

ALL who wish answers to inquiries addressed to CR should write a *letter* (not a postcard) and should enclose a stamped envelope, ready-addressed, for our reply. Sometimes it is necessary that we reply by enclosure of a BULLETIN tearsheet; therefore it is best that the envelope should be a long, No. 10 or No. 11 (10 and 10½ inches in length, respectively).

Preventing Sunburn and Promoting Tan

THE present vogue of excessive sunbathing is not so healthy a practice as its devotees are wont to think. For some years, CR has warned that too much ultraviolet from the sun may be a predisposing cause of cancer. It is now coming to be well known that both skin and lip cancer are more prevalent among fishermen, farmers, and Navy personnel than in other occupations. Even popular magazines and newspapers are beginning to discuss the dangers of too much sunshine. Women are discovering too, from sad experience, that acquiring a heavy coat of tan, year in and year out, robs the skin of its natural oils and leaves the tissues dry, roughened, coarsened, and a fertile field, as it were, for lines and wrinkles.

Every year there are numerous cases of absenteeism due to indisposition and illness caused by an overlong stay on the beach or at the pool over a week end or during the vacation period. Often the resulting symptoms will be just the temporary discomfort of itching, pain, and blistering, but there have on occasion been more serious effects, and even death. According to one medical journal, prolonged exposure to sunlight may cause many of the red corpuscles to liberate two chemicals. One is called porphyrin, which acts to make the sunlight more damaging to the skin tissues. The other is histamine, which is held to be responsible for the unpleasant aftereffects of overexposure.

It is obvious that people who like to be out of doors and those who are forced to be out in the open by reason of their occupation will often need to use one of the various sun-screening preparations that are on the market. Considerable work was done some years ago by Dr. Matthew Luckiesh, noted authority on light and radiant energy, aided by a group of well-qualified physicians, in developing a product for use by the Armed Services, particularly men marooned in the desert or on a life raft, that really afforded protection against sunburn. It was found that a coating of dark red veterinary petrolatum afforded complete protection to the skin for a period equivalent to 20 hours of the strongest sunshine in Cleveland measured during a four-year period. It is obvious, however, that such a material will hardly be acceptable on an appearance basis at a fashionable beach or swimming pool, or even on the golf course. Fortunately there are a number of proprietary products on the market that will provide adequate protection with more attractive appearance.

In order to give subscribers some knowledge of the sunscreening effectiveness of lotions currently available on the market, CR purchased samples of

Table I

Transmittance (in percent) of ultraviolet energy of various wavelengths compared with that of distilled water, whose absorption is practically zero for radiant energy of the wavelengths in question. The first brands afford the best protection, the last the poorest.

SAMPLE	TRANSMITTANCE Wavelength of ultraviolet energy (angstrom units)			
	2967	3130	3342	3650
Distilled Water	100	100	100	100
Brand Name				
Dorothy Gray Sunburn Cream	—	—	5.67	12.0
Ardena Sun-Pruf Cream No. 2	—	1.62	8.08	14.5
Norwich Greaseless Sun Tan Lotion	—	—	47.6	94.1
Gaby Greaseless Suntan Lotion	—	—	68.3	95.3
Insectan	—	1.86	38.4	65.1
Helena Rubinstein Suntan Oil	—	4.04	90.7	95.2
Sutra	—	52.9	85.0	90.0
Skol	6.85	16.2	68.3	83.8

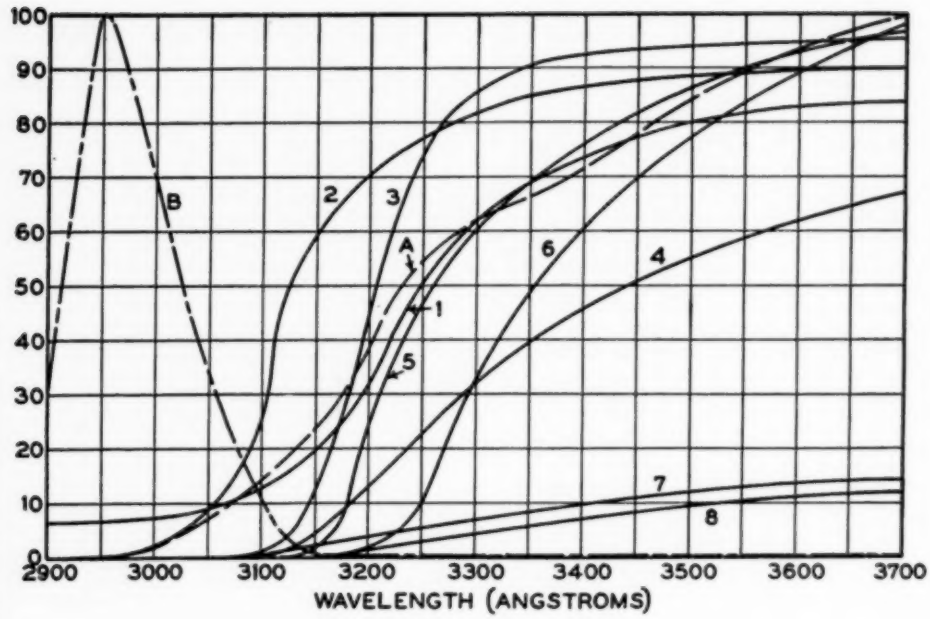


Figure 1

The spectral transmittance curves are plotted for the various brands which are numbered 1 to 8 inclusive. The "curve" for distilled water is a straight line having a transmittance of 100% through this spectral region. Curve B is that of the relative sunburn effectiveness of ultraviolet energy for the average skin. The effectiveness drops to a very low value for ultraviolet energy at wavelengths longer than 3200 angstroms. Curve A is the relative energy of sunlight and skylight reaching a horizontal surface on a summer day.

Key to Brand Names:
1. *Skol* 3. *Helena Rubinstein Suntan Oil* 5. *Gaby Greaseless Suntan Lotion* 7. *Ardena Sun-Pruf Cream No. 2*
2. *Sutra* 4. *Insectan* 6. *Norwich Greaseless Sun Tan Lotion* 8. *Dorothy Gray Sunburn Cream*

eight well-known brands. Measurements of transmittance of each product at four wavelengths of ultraviolet energy were made, using distilled water for a control, or comparison standard. The solar spectrum even at high altitudes does not extend as far as a wavelength of 2900 (expressed in angstrom units). Sunburn, or erythema, is chiefly caused by wavelengths around 2967 angstrom units. Quantitative measurements of the transmittance of sunburn preventives for energy at the 2967 region are of greatest importance. Only one of the brands tested (*Skol*) transmitted a significant amount of this energy; it would thus be ruled out from the class of the more effective sunburn preventives.

As the wavelength of ultraviolet energy increases, the production of sunburn decreases for a given intensity of energy or for a given exposure. To produce a good tan with a minimum amount of sunburn, energy shorter than 3200 angstrom units should be reduced to a minimum. Ultraviolet energy of longer wavelengths is quite effective in the production of tan.

The various brands of sunburn preventives are rated in order of their effectiveness as determined by the tests. The first was found to be the most effective in the group, the last one the least. No tests were made to discover whether the various products had possible irritating properties when applied as directed, nor was their efficacy as insect repellents measured where claims to that effect were made.

CR's Rating of Screening Effectiveness

Prices given do not include the 20 percent federal excise tax. Ratings are *A*, *B*, and *C* in decreasing order of effectiveness.

Creams

Dorothy Gray Sunburn Cream (Distributed by Dorothy Gray, Ltd., 445 Park Ave., New York City) 3¼ fl oz., $1. According to the label, essential filtering agent was glyceryl salicylate. An excellent sunburn preventive if a thick layer can be maintained on the skin. Its effec-

tiveness would probably be reduced if it melted and became transparent. Absorbed too much of the energy which is effective in producing a tan, if that effect is desired. **B**

Ardena Sun-Pruf Cream No. 2 (Elizabeth Arden, 681 Fifth Ave., N. Y. C.) 3-oz. tube, $1. According to label, contained 20% 2-ethylhexanediol–1.3; inert ingredients 80%. Claimed to be insect repellent. An excellent sunburn preventive if a thick layer can be maintained on the skin. Absorbed too much of the energy that is effective in producing tan. **B**

Oils or Liquid Lotions

Norwich Greaseless Sun Tan Lotion (The Norwich Pharmacal Co., Norwich, N. Y.) 6 fl. oz., 90c. According to label, contained S.F.–15 (glyceryl aminobenzoate), benzocaine, and alcohol (30%). For skins particularly sensitive to sunburn, this would appear to be the most effective of this type. **A**

Gaby Greaseless Suntan Lotion (Gaby Co., 1825 N. 6 St., Philadelphia) 8 fl. oz., 89c. Next to *Norwich* in effectiveness in preventing sunburn. **A**

Insectax Odorless Repellent Lotion (Distributed by Hall & Ruckel, Inc., 67 Vestry, N.Y.C.) 4 fl. oz., $1. According to label, active ingredients were dimethyl phthalate, indalone, and dimethyl carbate. Less satisfactory than two immediately preceding brands in protecting sensitive skins, for it reduced the long-wave ultraviolet energy effective in tanning, but transmitted a measurable amount of energy at 3130 angstroms. **B**

Helena Rubinstein Suntan Oil (Distributed by Helena Rubinstein, Inc., 655 Fifth Ave., N.Y.C.) 3-3/5 fl. oz., $1. According to label, essential ingredients 30% 2-ethylhexanediol–1.3; 70% insecticidally inert. Claimed to be insect repellent. Transmitted only 4% of energy at 3130 angstroms, but efficiently transmitted ultraviolet energy effective in producing tanning. For average skins, i.e., those not particularly sensitive to sunburn, this lotion should be one of the most effective in promoting a tan. **B**

Sutra (Distributed by Artra Cosmetics, Inc., Bloomfield, N.J.) 3 fl. oz., 50c. According to the label, contained hydroquinone and alcohol (32%). Considered of doubtful usefulness for skins that burn but do not tan. **C**

Skol (J. B. Williams Co., Glastonbury, Conn.) 6¼ fl. oz., 89c. According to label, contained alcohol (49% by volume), hexa hydroxyethyl tannic acid, aluminum chloride, salol, menthol, tertiary butyl cresol. Transmitted a significant amount of light energy at 2967 angstroms, and was considered of doubtful effectiveness for skins that burn but do not tan. **C**

Off the Editor's Chest

(Continued from page 2)

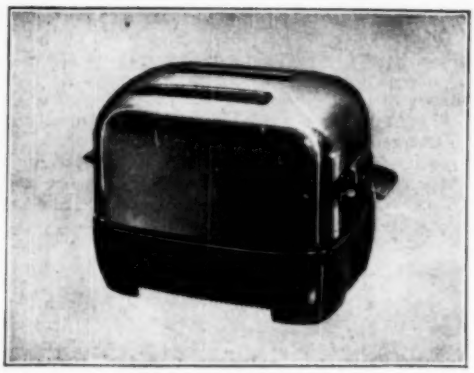
protein diet.

The fourth period in the history of nutrition Dr. McLester refers to as the "vitamin era." Deficiency diseases such as scurvy and pellagra were found to be cured with newly discovered substances such as vitamin C and niacin. After a period of enthusiasm for taking vitamin pills for all and sundry ailments, people began to heed the advice of more conservative experts that — except in extreme cases of nutritional deficiencies — vitamins are best taken in the form of natural foods and the needed nutritional substances should be secured from the butcher, the grocer, the dairyman, not the pharmacist. As an example of the importance of recognition of this point, Dr. McLester remarks that a few nutritionists are now calling themselves "ham and egg nutritionists."

This emphasis on the contribution of good meals to health has naturally turned attention to meat, man's favorite dish. Scientific interest in the role of protein in the diet was stimulated by the discovery by Professor W. C. Rose, University of Illinois, of the indispensability of ten of the twenty-two amino acids (the building stones of protein) in maintaining the life of experimental animals in controlled feeding experiments. It is now recognized that a deficiency of amino acids in the diet is more promptly evidenced than a lack of vitamins. Many cases are cited by Dr. McLester of the part played by protein in building resistance to infection, in promoting the health of pregnant women and aiding the development of infants, of minimizing the harmful effects of surgery, of speeding recovery of sick and injured persons, and even improving the condition of certain patients with peptic ulcers and liver and kidney ailments where earlier theories of treatment had excluded high protein diets.

Many similar pieces of evidence on the importance of meat in the diet have been reported from time to time in the pages of CR's BULLETIN as they appeared in medical and other professional journals. Those who have not followed the matter closely or who may have had doubts as to the soundness of CR's position on the subject will find it well worth while to read carefully Dr. McLester's excellent summary of the subject which appeared in the Journal of the American Medical Association, April 2, 1949, pages 897 to 903. The article should be read carefully and taken to heart by every person who has a major responsibility in the selection of dietaries and preparation of food for a family, or for an institution, hospital, public restaurant, or hotel.

Sunbeam, Model T-9



General Electric, Cat. No. 159177

Automatic and Semi-Automatic Toasters and a Grill—Final Report

THE preliminary report on this subject which appeared in the April issue did not include the results of a 500-operation endurance test. That test has now been completed, and the ratings adjusted in accordance with the findings thus made available. Other information of importance which could not be included in the previous report is presented at this time.

All the toasters tested accommodated two slices of bread. (The toaster-grill barely accommodated two slices.) In all models except the combination toaster-grill, the current was turned off automatically when the toast was "done," and all permitted the toast to be removed manually, if desired, before toasting was completed. The toasters with clockwork timing mechanism were: *Delta*, *Dominion 1105*, *Kenmore*, *Press-to-Magic*, *Monitor*, and *Universal*. Of these, the first four required preheating to make toast of uniform character. All the appliances withstood the application of the high voltage breakdown test, and electrical leakage measurements showed that none of them had excessive leakage current.

The temperatures of the parts of an appliance that have to be handled by the user should not exceed 130°F if the part is made of metal, 150°F if made of wood or plastic. The temperature below a toaster should not be so high as to cause damage to a varnished or other finished table surface.

In general, the toasters were found to be poorly adapted to the handling of very small or very large slices of bread. With four exceptions (the *Sunbeam*, *Samson*, *Proctor*, and *Delta*), the toasters did not pop up the small pieces high enough so that they could be removed without burning the fingers, unless a fork was used. (The use of a metal tool in this way is definitely undesirable.) The *Samson* was the only automatic toaster which handled well the large slices cut from "home-style" loaves.

Several complaints have been received from subscribers of the poor performance of the high-priced automatic toasters they have purchased. Sometimes these toasters have been returned to the factories for repair, not once but several times, with disappointing results. This lack of uniformity among toasters of the same brand, and the manufac-

Monitor, Model C4B

turers' use of untried designs strongly suggests subscribers should demand a demonstration in the store, on the toaster to be bought, before deciding on the purchase. At least three slices of toast should be made at each setting, Light, Medium, and Dark, if one wishes to be sure of getting a satisfactory toaster (unless one is given privilege of full refund after a trial of the toaster at home, if it should turn out badly).

Rated energy consumption in watts, when stated on the nameplate, is given in the listings for each toaster, followed in parentheses by actual watts as measured at 118 volts.

All of the toasters were accompanied by a one-year guarantee against defective materials or workmanship. All toasters satisfactorily completed the 500-cycle endurance test except as noted.

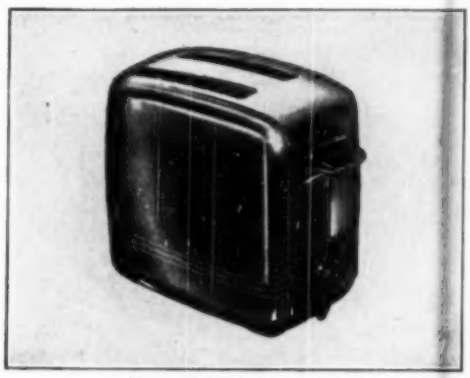
Toastmaster, Model 1B14

Fully-Automatic Type

A. Recommended

General Electric, Cat. No. 159T77 (General Electric Co., Bridgeport, Conn.) $21.50. An ac-dc toaster with thermal-switch timing mechanism. Choice of "pop up," or "keep warm" when toast is done. Rated watts, 1150 (1260). Temperature of handle, within safe limits. Crumb tray was of relatively flimsy construction and was hard to remove without spilling crumbs. Toasting, satisfactory at *light* and *medium* settings; fifth slice at *dark* setting unevenly toasted. **3**

Proctor, Model 1481 (Proctor Electric Co., Philadelphia 40) $22. An a-c pop-up toaster with thermal-switch timing mechanism known as a *Color Guard*, which is claimed to adjust automatically for fresh or dry bread. Rated watts, 1000 (1060). Adequate crumb tray for easy cleaning. Toaster was relatively easy to disassemble for servicing. First sample tested was defective in that it could not be adjusted to make medium or dark toast without causing burning. Contact points stuck in "On" position at least five times during endurance test; otherwise satisfactorily completed this



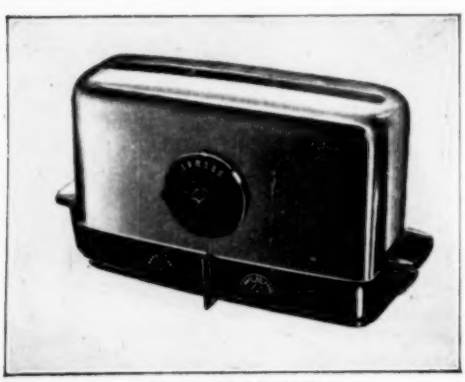
Universal, Model EA-B2601

Kenmore, Model 307-63231

Dominion Combination Toaster and Grill, Model 1208A

Proctor, Model 1481

Delta, Model 280



Samson, Model 5147N

test. A second sample was satisfactory and produced even toasting at all settings. **3**

Samson, Model 5147N (Samson United Corp., Rochester 10, N.Y.) $21.95. An a-c pop-up toaster with thermal-switch timing mechanism. Slices are placed end to end instead of side by side as in other toasters. Considered to have best timing mechanism of any of the toasters tested. Pop-up mechanism somewhat too energetic in action. A mechanical fault in the toaster as received, due to a cam which was stuck, required correction before toaster could be used. Rated watts, 1100 (1090). Temperature at handle, well within safe limit. Adequate crumb drawer for easy cleaning. Toasting even and satisfactory at *light* and *medium* settings; fifth slice at *dark* setting unevenly toasted. **3**

Sunbeam, Model T-9 (Sunbeam Corp., 5600 W. Roosevelt Rd., Chicago 50) $22.50. An ac-dc toaster with thermal-switch timing mechanism and voltage compensating device. Choice of "pop up" or "keep warm" settings. Rated watts, 1100 (1110). Temperature of handle (182°F), excessive. Adequate crumb tray for easy cleaning. At *light* setting first slice was underdone, fifth slice satisfactory and even; at *medium*, both first and fifth slices evenly medium toasted; at *dark*, both first and fifth slices evenly overdone (burned). **3**

Toastmaster, Model 1B14 (McGraw Electric Co., Elgin, Ill.) $21.50. An ac-dc pop-up toaster with thermal-switch timing mechanism. Rated watts, not stated, but 10.5 ampere rating indicates 1240 (1210). Temperature of handle, within safe limit. Adequate crumb tray for easy cleaning. At *light* setting, first slice underdone, fifth slice even and done; at *medium*, first slice medium and even, fifth slice dark and even; at *dark*, first slice dark and uneven, fifth slice uneven, and burned. **3**

B. Intermediate

Camfield, Model 24-1-2 (Camfield Mfg. Co., Grand Haven, Mich.) $22. An ac-dc pop-up toaster with thermal-switch timing mechanism and voltage adjustment. Rated watts, not stated, but 10-ampere rating indicates 1180 (1180). Temperature at handle (206°F), far too high. Adequate crumb tray for easy cleaning. At *light* and *medium* settings, toast was underdone; at *dark*, toast was slightly burned. Except for very much too high temperature of handle, would have warranted an *A* rating. **3**

Delta, Model 280 (Delta Mfg. Corp., 611 N. 40 St., Philadelphia) $19.95. An a-c toaster with clockwork timing mechanism. Toast and crumbs slide out at the bottom, at end of toasting period. Rated watts, 940 (930). Temperature of handle well within safe limit. At *light* setting, toast was underdone; at *medium* and *dark* settings, it was uneven. **3**

C. Not Recommended

Monitor, Model C4B (Monitor Equipment Corp., 640 W. 249 St., New York City) $19.95. An a-c pop-up toaster with clockwork timing mechanism fitted with thermally operated control. Contacts occasionally stuck in "On" position, and clock mechanism often stalled during endurance test. Rated watts, not stated, but 8-ampere rating indicates 940 (900). Temperature at handle (178°F), and at table top below toaster, excessive. Easy

to clean. At *light* setting, first slice underdone, fifth even and satisfactory; at *medium*, first and fifth slices both medium but uneven; at *dark*, first slice dark and even, fifth slice burned. **3**

Press-to-Magic (no model number) (Leslie Electric Co., Inc., Brooklyn 1, N. Y.) $19.95. An a-c pop-up toaster with clockwork timing mechanism. Rated watts, 800. Toaster was held together by flimsy metal tabs of the sort commonly used on cheap metal toys. Temperature at table top below toaster was excessive. Timer stalled often during toasting period; at other times contacts opened after 10 to 20 seconds. It was impossible to keep the toaster in operation long enough to obtain the required test data. This was considered the least satisfactory of the toasters tested; considering its design and performance, its high price was distinctly "out of line." **3**

Universal, Model EA-B2601 (Landers, Frary, & Clark, New Britain, Conn.) $19.95. An a-c pop-up toaster with clockwork timing mechanism with a thermally operated brake to adjust start of timing. Rated watts, 1150 (1120). Temperature of handle (226°F), far too high. At *light* setting, toast was underdone; at *medium*, first slice was underdone, fifth slice light and even; at *dark*, first slice dark and uneven, fifth slice burned. Clockwork failed after 438 cycles of endurance test. **3**

Semi-Automatic Type

(Similar to automatic type, except that toast does not pop up [or down] when done.)

B. Intermediate

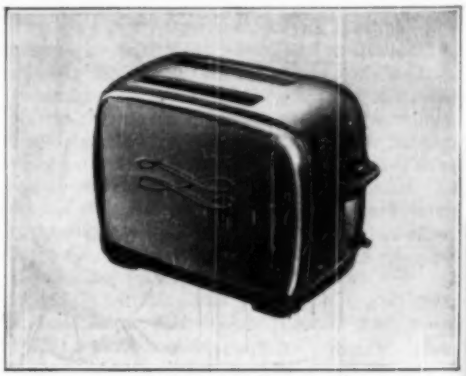
Dominion, Model 1105 (Dominion Electric Corp., Mansfield, Ohio) $9.98. An a-c toaster with clockwork timing mechanism; toast does not pop up when done. Rated watts, 700 (740). Temperature of handles, well within safe limits. Control had a tendency to slip toward *light*, making frequent resetting necessary. Rather difficult to clean. At *light* setting, toast was underdone; at *medium*, first slice was underdone, fifth slice uneven; at *dark*, first slice was uneven, fifth slice burned. **1**

Kenmore, Model 307-63231 (Sears, Roebuck & Co., 4640 Roosevelt Blvd., Philadelphia 32) $9.95. An a-c toaster with clockwork timing mechanism; toast does not pop up when done. Rated watts, 660 (660). Temperature of handle (162°F), somewhat above CR's limit; had detachable cord and guard around plug terminals (desirable). Rather difficult to clean. At *light* setting, first slice was underdone, fifth satisfactory and even; at *medium*, first slice light and even, fifth dark and even; at *dark*, first slice dark and even, fifth burst into flames. **1**

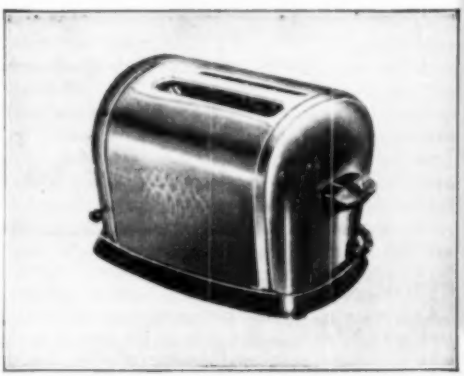
Toaster and Grill Combination

C. Not Recommended

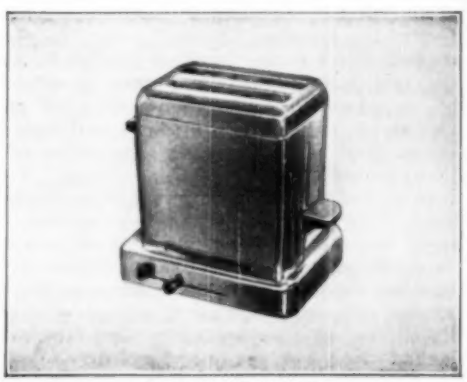
Dominion Combination Toaster and Grill, Model 1208A (Dominion Electric Corp., Mansfield, Ohio) $10.95. A conventional 2-plate ac-dc grill, with flat heating surfaces for toasting and grilling, and interchangeable waffle grids. Had a temperature indicator. Detachable connecting cord. Plug terminals lacked customary (and obviously requisite) safeguard to prevent accidental contact with live terminals when connecting plug to appliance. Rated watts, 600 (590). Temperature of handles, satisfactory. Easy to clean, and heating surfaces easily interchanged. (Test of the appliance was only as to its action as a toaster.) Preheating, until temperature indicator reached "bake" position, required six minutes; thereafter light toast could be made in one minute, dark toast in two minutes. Element burned out after 62 cycles of endurance test.



Camfield, Model 24-1-2



Press-to-Magic



Dominion, Model 1105

This picture shows how sprays containing DDT should **not** *be used, at any time, in home, restaurant, or institution.*

Danger to Health in DDT

THE possibility that DDT may involve a menace to human beings who come into contact with it, as well as death to the insects against which it has functioned successfully in the past three or four years, has received considerable attention in professional circles and the public press during the past few months. At a recent convention of the American Chemical Society in which representatives of the American Medical Association participated, there was a heated controversy on the dangers of contamination by DDT of a number of important food products (and, to some extent, contamination by other substances used in insect control).

In spite of the growing fear that the widespread use of DDT will imperil health, there has been the usual insistence by people connected with agricultural colleges and industry that no danger, or at least no danger of practical importance to consumers, will result from use of this powerful new insecticide. One western agricultural experiment station expert has been quoted recently as declaring that the use of the new substances (including DDT specifically) "could not possibly be considered a health hazard." Medical experts have taken a contrary view and the American Medical Association has sharply criticized manufacturers who have placed potent insecticides on the market before there was time to develop full knowledge of their effects on human beings.

An important factor in the situation is that, while there is a tendency to assume that those who make use of DDT in industry and on the farm are aware of the dangers, long experience with arsenical insecticides over the past 90 years or so has given ample evidence that no such general knowledge and care by users can *ever* be safely assumed. Instances have repeatedly come to notice where farmers and truck gardeners have used lead arsenate and similar deadly poisons in concentrations that were practically certain to result in illness, or even death, of persons consuming fruits and vegetables from the fields of such farmers. Common sense, of course, should tell us that with millions of persons on farms and in factories, restaurants, and homes engaged in utilization of such substances.

many of whom will surely be persons of limited intelligence, with little ability or willingness to take the time to read labels and instructions, there must be thousands who will not know the danger or have the least idea of how to guard against it. There will be many others who would not be convinced of the reality of such a danger even if they were carefully instructed in regard to it. Popular magazines with circulations in the millions have contributed greatly to the misinforming of the public, for they have pictured the free use of DDT without indication that there might be serious dangers in the process. In fact it has been common practice to mention DDT as being "harmless to human beings, animals, and food."

The general population, having no knowledge of questions of toxicity, is inclined to assume that a substance can be highly poisonous to insects and yet be perfectly harmless to man, even when used in large quantities over considerable areas and permitted to contaminate the skin, to be sprayed in bedrooms, kitchens, dining rooms, and restaurants where it can contaminate textiles and food and food utensils, in addition to its widespread application on crops. It is not possible to remove DDT from contaminated foods, for it is little affected by cooking, nor can it be readily removed from walls, furniture, radiators, and the like, on which it has been deposited as a spray or a dust. When ingested by farm animals that are fed in sprayed pasture or on contaminated fodder, it accumulates in their body fat and appears in meat and in milk and butter.

Recently the Department of Agriculture has become alarmed about the matter, and has announced that *no tolerance will be allowed for DDT residues in foodstuffs* (exactly the attitude the food and drug officials took at one time regarding *lead* as a residue from insect sprays on fruits and vegetables). Some newspaper stories have indicated that the Food and Drug Administration has banned shipments of milk involving large quantities because of DDT contamination resulting from the spraying of cows to control flies; and there was even one indication that within a week or two from the date of a release by the Department of Agriculture cautioning against further use of DDT, results of actual tests to measure the amount of DDT present in samples of milk in one state might be made public. The past history of food and drug controls suggests that no such publication will be made, *unless* it should turn out that the data indicate (or can be interpreted to indicate) that milk products are substantially free from DDT.

State and federal governmental authorities must shoulder considerable blame for the present situation, for experts in this field have known for a long time that there is grave danger of poisoning. Indeed, we are informed that certain public agencies have exerted efforts to prevent the public from receiving information about actual instances of persons who have experienced toxic effects from DDT products. The Food and Drug Administration has, however, made a distinctly helpful contribution to the situation by pointing out that DDT must not be present *even in minute amounts* in a food so universally used as milk, which should, of course, be *entirely* free from poisons, because it is consumed by infants, children, and invalids. The Food and Drug Administration has gone further, in issuing a press release advising against the use of DDT on dairy cattle and suggesting the substitution of methoxychlor (regarding which there is likewise no absolute assurance of its freedom from harmful qualities if it is consumed continually in foodstuffs that are eaten in large quantities. Present information indicates that its toxicity is considerably less than that of DDT but the exact relationship is not known).

State officials have not lived up either to their opportunities or their powers under state laws, and in general, in connection with questions involving new problems having to do with the safety of foods and drugs, they have been, with rare exceptions, either uninformed or unwilling to deal with the issues — which, naturally, very often involve questions of a highly controversial and technical nature. (It is the dilatoriness and lack of technical and administrative initiative on the part of state officials in such matters that have in large measure contributed to the constant expansion of federal power, not only in food and drug matters, but in many other fields. The governors and legislators of states who do not relish this tendency should take steps to see that the state officials whose responsibilities include such matters are encouraged to "get on top of their jobs," and to employ such professional services, either as staff members or as consultants, as will enable them to evaluate correctly such problems as the present one, and to understand and deal with toxicological and chemical questions promptly and effectively.)

Alarm regarding this whole matter has recently been sounded by a New York physician in The American Journal of Digestive Diseases. The author of that article, who includes 37 references to medical, pharmacological, physiological, and other professional literature, believes that the "Virus X" disease, which has been widely distributed, is a result of poisoning of individuals by DDT. Although the views of those who contend that the wide use of DDT involves a public health hazard have been widely derided by industrialists and even by food control authorities, there is no doubt at all that the warnings now being read in a few newspapers and in some parts of the technical and trade press should be closely heeded by all who are in a position to reduce their exposure to the dangers of DDT poisoning. A joint statement by four federal government agencies concerned with

the matter insisted that there was no relation between "Virus X" disease and DDT; likewise that there was "no evidence that use of DDT in accordance with recommendations of federal agencies has ever caused human sickness."

There is a sound rule that consumers should always follow, especially in any matter where life or health is critically involved; that is, almost never to believe what they read in newspapers and popular magazines regarding any and all questions that are fundamentally scientific or technical in their nature. Such material may be written in good faith, but it is rarely written by people who know their subject matter or who are aware of the historic background of topics where dangers of any sort, including toxicity, may be involved. Journalists and writers for popular magazines almost without exception tend to look upon the world of new scientific developments through rose-colored glasses and to assume that everything that is new must be better than that which has been used and tried for many years. As to questions of safety, they are likely not even to think of the hazards in a new development until something serious has taken place to cause public alarm.

The very effectiveness of DDT as an insecticide makes it the more dangerous, because the layman has no appreciation of problems of toxicity in general or with respect to specific poisonous substances. (The same, of course, is true, to a considerable degree, as to most chemists.) The consumer cannot, as a rule, understand the idea of cumulative poisoning, by which small doses, individually incapable of causing detectable harm, may become fatal or cause a catastrophic illness after a period of storage in the body.

The New York physician's literature survey, as noted in his article in The American Journal of Digestive Diseases mentioned previously, indicates that at least 46 known cases of DDT poisoning have occurred. (The actual number is doubtless much larger.) Six cases were known to have been fatal.

Readers who have followed CR's work for some years will be aware that when we first discussed DDT (in October 1945) we pointed out that its use involved serious hazards; we noted too that it was to be expected that consumers would use the new insecticide carelessly and without taking the essential precautions to prevent inhalation of the material or contact with the skin. We mentioned that DDT's toxicity was not yet fully understood, but that it was believed to be "about as dangerous to human beings as lead arsenate (which is a very dangerous poison)." The present view is that DDT is a much *more* poisonous substance than lead arsenate. We observed that any poisoning by DDT might perhaps defy medical treatment; on that account, it is vitally important that extreme care should be taken by consumers in their use of the new material.

The most important conclusion to be drawn from the recent publication of findings regarding the dangers of DDT to the health of the population is that wise consumers should not permit themselves to be carried away by the enthusiasm of either public officials or the popular press to adopt quickly for wide use new and untested substances that are potent against insects or other pests or against disease. *The new substance is very likely to bring perils of its own*, and those may in many cases be more serious than those which the new discovery is meant to control. That has been proved to be true in the course of a generation or more with regard to the spraying of fruits and vegetables with lead and arsenic and other highly toxic poisons. It is very likely to be true with respect to DDT, which readers will recall was acclaimed as the wonder killer that would destroy all or most of the pests of the insect world at greatly diminished cost and trouble as compared with other potent insecticides. If developments in the near future indicate need for presentation of more information on this subject, CR's BULLETIN will within the next few months include a summary of some of the more important material in our rather large collection of published papers on the subject of DDT's toxicity to human beings and to domestic animals.

Lens, Shutter, and Range-Finder Testing Service Available

ADVANCED photographic amateurs who may not have seen the previous notice will be interested to know that CR has made provisions for tests of camera lenses, shutters, and range-finders by a well-qualified physicist. A full announcement of the availability of this service is given in our October 1948 BULLETIN, at pages 18-19. Anyone who does not have the BULLETIN and who might be interested in having a camera lens, shutter, or range-finder tested, will be sent a tearsheet of the announcement, upon application accompanied by a ready-addressed, stamped envelope.

A Good Booklet on Loud-Speakers

THE PROBLEM of loud-speakers and how to choose a good one, what can be expected of loud-speakers at various price levels in the way of fidelity of reproduction of fine music, are all questions that are of great interest to CR subscribers at this time. In our article in the February issue we presented a fairly full discussion of tests of a number of loud-speakers and included also a brief citation of some reference material for readers who might be interested in looking further into the question. Since that material was prepared, an exceptionally good and readable discussion of loud-speakers from an English source has come to our notice. This is obtainable on mail order from Sun Radio and Electronics Co., Inc., 122-124 Duane St., New York 7, at $1.47 each, postpaid. The full title of the booklet is Loudspeakers — The Why and How of Good Reproduction, by G. A. Briggs (published by Wharfedale Wireless Works, Bradford Rd., Idle, Bradford, Yorkshire), Second Edition, December 1948, 86 pages plus index, well illustrated.

This booklet discusses, among a total of 25 titles of sections, Quality of Reproduction and Distortion; Cones; Impedance; Phons and Decibels; Frequency Response, including tonal balance; Cabinets and Baffles (rather fully treated); Room Acoustics; Crossover Networks; Transformers and Matching; Loud-Speaker Efficiency. The booklet can be recommended to all who would like a sound, general knowledge of some of the most important musical, acoustical, and electrical problems involved in good reproduction in the home. Since there are many who may be tempted to buy expensive speaker equipment without knowing whether they are at all likely to obtain the results which they hope for in their purchase, the book has important money-saving possibilities for consumers, especially those who wish to understand at least the fundamentals of the subject before making the investment of 80 to 400 dollars that is now necessary to obtain top-grade speaker equipment.

Corrections and Emendations to Consumers' Research Monthly Bulletins

Electric Automatic Storage Water Heaters
Page 30, Col. 1
Jan. '49 Bulletin

L & H (A. J. Lindemann & Hoverson Co.). These heaters have built-in magnesium anodes as regular equipment.

Men's Undershirts
Page 17, Col. 1
Jan. '49 Bulletin

Delete the first line of the listing of the *Reliance Town Shirt* and substitute the following: *Town Shirt* (Distributed by Wieboldt Stores, Inc., Chicago) 59c. This shirt was represented as being made by Reliance, at the time of its purchase in a Wieboldt store. However, the Reliance Manufacturing Co., of Chicago, has advised CR that it did not manufacture the *Town Shirt* listed.

Dictating Machines
Page 12, Col. 2
March '49 Bulletin

SoundScriber. The *A-Recommended* rating applies to recently produced models in which the .025 mfd. condenser between the negative B Supply (B—) and chassis has been replaced by a .005 mfd. condenser and the recorder volume control has been insulated from the chassis, thus reducing the shock hazard previously present to a degree that falls within limits CR regards as reasonable. According to the manufacturer, all future production and all machines now in stock will have these changes incorporated; the modifications will reduce the leakage current to a satisfactorily low limit.

Dictating Machines
Page 13
Mar. '49 Bulletin

The manufacturer of the *Brush Soundmirror* has informed CR that the *Soundmirror* was not designed for use as an office dictation machine. The correct price for the table-type recorder (*Model BK-411*) is $229.50. The price of $375 mentioned in the BULLETIN refers to a portable model. The price of the professional model of the *Mail-A-Voice* dictation machine was incorrectly given as $371. Its correct price is $157.50.

Amplifiers
Page 7
April '49 Bulletin

Electronic Sound Engineering Co. is no longer the sales representative for the *Universal UB-15 Amplifier.* Persons interested in obtaining the amplifier should communicate directly with the manufacturer, Universal Broadcast Equipment Corp., 6035 Northwest Highway, Chicago 31.

Electronic Organs for Church and Home
Page 18, Col. 1
May '49 Bulletin

The last sentence in column 1, page 18, should be corrected to read: "About fourteen years ago Laurens Hammond invented an electronic organ whose tone was produced by currents induced in a coil wound on a permanent magnet by the motion at its pole face of a cusped disk rotated at constant speed by a synchronous motor."

RATINGS of MOTION PICTURES

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times; Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety* (weekly), *Weekly Guide to Selected Motion Pictures* (National Board of Review of Motion Pictures, Inc.), and *Unbiased Opinions of Current Motion Pictures* which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, Vitacolor, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
non—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	14	3	**Accused, The**	*cri-mel A*
1	10	6	**Act of Violence, An**	*war-mel A*
—	6	3	**Adventure in Baltimore**	*com AY*
—	10	5	**Adventures of Don Juan**	*adv-c A*
—	2	5	**Affairs of a Rogue, The**	*hist-dr A*
—	3	1	**Alaska Patrol**	*mel AYC*
—	9	7	**Alias Nick Beal**	*fan A*
—	3	4	**Angel in Exile**	*mel A*
—	1	8	**Angel on the Amazon**	*dr A*
—	—	7	**Angry God, The**	*dr-c A*
—	—	3	**Arkansas Swing, The**	*mus-com AYC*
—	2	2	**Back Streets of Paris**	*mel A*
—	—	3	**Back Trail**	*wes AYC*
3	8	3	**Bad Boy**	*dr AYC*
—	6	2	**Badmen of Tombstone**	*wes A*
2	6	—	**Barkleys of Broadway, The**	*mus-com-c A*
—	4	8	**Belle Starr's Daughter**	*wes A*
—	2	1	**Bells of the Old City**	*com-c A*
—	1	5	**Big Jack**	*dr A*
—	5	1	**Big Sombrero, The**	*mus-wes-c AYC*
—	2	2	**Blondie's Big Deal**	*com AYC*
—	3	6	**Blondie's Secret**	*com AYC*
—	10	5	**Blood on the Moon**	*wes A*
—	7	4	**Bomba, The Jungle Boy**	*adv-c AYC*
—	3	3	**Borrowed Trouble**	*wes AYC*
—	2	3	**Boston Blackie's Chinese Venture**	*cri-mel AY*
—	7	8	**Boy with Green Hair, The**	*fan AYC*
—	7	8	**Bribe, The**	*cri-mel A*
—	4	8	**Bride of Vengeance**	*hist-dr A*
—	2	3	**Brothers in the Saddle**	*wes A*
—	1	6	**Bungalow 13**	*mys-mel A*
—	8	2	**Canadian Pacific**	*mel-c AY*
—	5	2	**Canterbury Tale, A**	*dr A*
—	—	3	**Caravan**	*adv A*
—	2	14	**Caught**	*dr A*
—	6	2	**Cesar**	*dr A*
1	10	4	**Champion**	*mel A*
—	13	4	**Chicken Every Sunday**	*com A*
—	4	3	**Chips Are Down, The**	*non A*
—	4	8	**City Across the River**	*cri-mel A*
—	3	6	**Clay Pigeon, The**	*mel A*
4	11	1	**Command Decision**	*war-dr AY*
—	14	2	**Connecticut Yankee in King Arthur's Court, A**	*mus-com-c AYC*
—	3	7	**Countess of Monte Cristo, The**	*mus-com A*
—	7	4	**Cover Up**	*dr A*
—	—	3	**Crime Doctor's Diary, The**	*mys-mel AY*
—	5	10	**Criss Cross**	*cri-mel A*
—	11	2	**Dark Past, The**	*cri-mel A*
—	1	6	**Daughter of the Jungle**	*adv AYC*
—	5	—	**Daughter of the West**	*wes-c A*
—	3	9	**Decision of Christopher Blake, The**	*dr A*
—	1	2	**Denver Kid, The**	*wes AYC*
—	2	2	**Devil's Daughter**	*dr A*
1	3	2	**Don't Take It to Heart**	*com AYC*
3	11	1	**Down to the Sea in Ships**	*mel AY*
—	2	4	**Duke of Chicago**	*mel AY*
—	7	3	**Dulcimer Street**	*dr A*
—	2	5	**Dynamite**	*mel AY*
—	3	5	**Eagle With Two Heads, The**	*dr A*
—	6	3	**Easy Money**	*com A*
—	1	2	**El Dorado Pass**	*mus-wes AYC*
—	3	9	**El Paso**	*wes-c A*
3	10	4	**Enchantment**	*dr A*
—	—	4	**Eternal Husband, The**	*dr A*
—	11	5	**Every Girl Should Be Married**	*com AY*
—	3	1	**Fallen Idol, The**	*dr A*
—	—	4	**False Paradise**	*wes AYC*
—	11	5	**Family Honeymoon**	*com AYC*
—	5	7	**Fan, The**	*dr A*
—	5	1	**Far Frontier, The**	*mus-wes-c AY*
—	1	3	**Fear No Evil**	*dr A*
—	—	4	**Feathered Serpent, The**	*mys AY*
—	11	4	**Fighter Squadron**	*war-mel-c A*
—	1	4	**Fighting Back**	*mel AYC*
—	9	3	**Fighting O'Flynn, The**	*non-c AY*
1	3	1	**Flamingo Road**	*dr A*
—	2	8	**Flaxy Martin**	*dr A*
—	6	8	**Force of Evil**	*cri-dr A*
—	5	2	**Four Steps in the Clouds**	*com A*
—	4	2	**Grand Canyon Trail**	*mus-wes AYC*
1	6	2	**Green Promise, The**	*dr AYC*
—	2	3	**Gun Smugglers**	*wes AYC*
—	—	4	**Gunning for Justice**	*wes AYC*
—	—	6	**Harpoon**	*mel A*
—	13	1	**He Walked By Night**	*cri-mel A*
—	6	2	**Henry, the Rainmaker**	*com AYC*
—	2	1	**Her Man Gilbey**	*com A*
—	—	3	**Hidden Danger**	*wes AYC*
—	1	5	**Hideout**	*cri-mel A*
—	4	5	**High Fury**	*dr A*
—	3	1	**Highway 13**	*mel A*
1	11	4	**Hills of Home**	*dr-c AYC*
—	3	1	**His Young Wife**	*dr A*
—	1	5	**Homicide**	*cri-mel A*
—	2	4	**Homicide for Three**	*mys-mel A*
—	4	1	**I Am With You**	*dr AY*
—	1	3	**I Cheated the Law**	*cri-dr A*
—	5	1	**I Shot Jesse James**	*mel A*
—	7	6	**Impact**	*cri-mel A*
—	4	2	**Incident**	*mel AY*

A	B	C		
—	5	1	**Indian Agent**	*wes AYC*
—	—	4	**Inner Sanctum**	*mys-mel A*
—	—	5	**Interlude**	*dr A*
—	2	7	**It Always Rains Sunday**	*dr A*
—	2	2	**Jiggs and Maggie in Court**	*com AYC*
—	1	6	**Jigsaw**	*dr A*
8	9	2	**Joan of Arc**	*dr AY*
—	5	1	**Joe Palooka in The Big Fight**	*mel AY*
—	12	5	**John Loves Mary**	*com A*
1	11	3	**June Bride**	*com A*
—	—	4	**Jungle Goddess**	*dr AYC*
—	2	3	**Jungle Jim**	*mel AY*
1	8	1	**Jungle Patrol**	*war-mel A*
—	1	6	**Just William's Luck**	*com A*
—	7	5	**Kiss in the Dark, A**	*com A*
—	5	6	**Kiss the Blood off My Hands**	*cri-mel A*
—	9	7	**Kissing Bandit, The**	*mus-com-c A*
1	8	5	**Knock on Any Door**	*cri-mel A*
—	3	4	**Ladies of the Chorus**	*mus-com A*
—	6	3	**Last Bandit, The**	*wes-c A*
—	5	—	**Last of the Wild Horses**	*wes-c A*
—	2	3	**Last Stop, The**	*war-dr A*
—	—	3	**Law of the Barbary Coast**	*mel A*
—	4	2	**Lawton Story, The**	*dr-c A*
—	3	5	**Leather Gloves**	*mel A*
—	4	9	**Let's Live a Little**	*com A*
—	15	2	**Letter to Three Wives, A**	*dr A*
1	5	9	**Life of Riley, The**	*com AYC*
2	5	8	**Little Women**	*dr-c YC*
—	5	1	**Loaded Pistols**	*mus-wes AYC*
—	2	6	**Lone Wolf and His Lady, The**	*cri-mel A*
—	4	2	**Long is the Road**	*propaganda-dr A*
—	1	3	**Lovable Cheat, The**	*com A*
—	—	3	**Lovers, The**	*dr A*
—	2	11	**Lucky Stiff, The**	*cri-com A*
—	3	5	**Ma and Pa Kettle**	*com AYC*
—	6	5	**Man About the House, The**	*mel A*
—	10	6	**Man from Colorado, The**	*wes-c AY*
—	2	1	**Man to Men**	*dr AYC*
1	2	2	**Manhandled**	*mys-mel A*
—	2	3	**Manhattan Angel**	*mus-com AY*
—	—	3	**Mark of the Lash**	*wes AYC*
—	3	2	**Massacre River**	*mel-c A*
—	6	6	**Mexican Hayride**	*com A*
—	7	5	**Miranda**	*com A*
—	2	3	**Miss Mink of 1949**	*com A*
—	1	5	**Mlle. Désirée**	*dr A*
1	9	1	**Monsieur Vincent**	*dr A*
—	3	3	**Monte Cassino**	*war-dr AY*
—	10	5	**Mother is a Freshman**	*com-c AYC*
—	2	4	**Mozart Story, The**	*mus-dr A*
1	6	2	**Mr. Belvedere Goes to College**	*com A*
—	10	2	**Mr. Perrin and Mr. Traill**	*dr A*
—	2	4	**My Brother's Keeper**	*mel A*
—	5	5	**My Dream Is Yours**	*mus-com-c A*
—	4	12	**My Own True Love**	*war-dr A*
—	5	—	**Night Time in Nevada**	*mus-wes-c AYC*
—	1	2	**Night Unto Night**	*dr A*
—	7	12	**No Minor Vices**	*com A*
—	1	3	**Old-Fashioned Girl, An**	*mus-dr AYC*
—	4	7	**One Night With You**	*mus-dr AY*
—	4	8	**One Sunday Afternoon**	*mus-com-c A*
—	3	1	**Outcry**	*war-dr A*
—	—	3	**Outlaw Brand**	*mus-wes AYC*
—	3	9	**Outpost in Morocco**	*mel A*
—	14	6	**Paleface, The**	*mus-com-c A*
—	1	7	**Parole, Inc.**	*cri-mel A*
—	3	4	**Piccadilly Incident**	*war-dr A*
—	6	3	**Place of One's Own, A**	*mys-dr A*
—	1	4	**Plot to Kill Roosevelt, The**	*cri-mel A*
—	6	4	**Plunderers, The**	*mus-wes-c A*
1	10	6	**Portrait of Jennie**	*dr-c A*
—	3	5	**Prejudice**	*propaganda-dr A*
—	1	2	**Professor, My Son**	*dr A*
2	11	1	**Quartet**	*dr A*
—	8	2	**Quiet One, The**	*doc-dr A*
—	2	5	**Racing Luck**	*dr AYC*
—	—	5	**Rangers Ride, The**	*mus-wes AYC*
—	10	1	**Red Canyon**	*wes-c AYC*
1	8	6	**Red Pony, The**	*dr-c A*
2	9	5	**Red Shoes, The**	*mel-c AY*
—	5	2	**Red Stallion in the Rockies**	*dr-c AY*
—	11	5	**Return of October, The**	*com-c A*
—	3	2	**Ride, Ryder, Ride**	*wes-c YC*
—	3	—	**Rimfire**	*wes AY*
—	2	7	**Rose of the Yukon**	*mel AYC*
—	—	3	**Rozina, the Love Child**	*dr A*
—	3	2	**Rustlers**	*mus-wes AYC*
—	1	2	**Rusty Saves a Life**	*dr AYC*
—	3	2	**Saraband**	*hist-dr-c A*
1	3	2	**Scott of the Antarctic**	*dr-c AYC*
—	3	—	**Secret Garden**	*dr-c AYC*
—	1	2	**Secret Mission**	*war-mel A*
—	—	3	**Secrets of a Ballerina**	*dr A*
1	9	5	**Set-Up, The**	*mel A*
—	3	1	**Shep Comes Home**	*dr AYC*
—	2	5	**Sheriff of Wichita**	*wes AYC*
—	5	5	**Shockproof**	*mel A*
—	—	4	**Silver Trails**	*mus-wes AYC*
—	1	9	**Siren of Atlantis**	*fan A*
—	6	4	**Sleeping Car to Trieste**	*cri-mel A*
—	7	3	**Slightly French**	*mus-com-c A*
—	2	1	**Smoky Mountain Melody**	*mus-wes AYC*
4	8	8	**Snake Pit, The**	*mel A*
—	4	4	**Snowbound**	*dr A*
2	11	4	**So Dear to My Heart**	*mus-car-c AYC*
—	2	1	**Son of God's Country**	*wes AYC*
—	2	5	**Song of India**	*mel AYC*
—	1	3	**Sons of Adventure**	*mys-mel AY*
1	3	—	**Sorrowful Jones**	*com A*
—	5	1	**S.O.S. Submarine**	*war-doc AY*
—	8	7	**South of St. Louis**	*wes-c A*
—	—	5	**Spirit and the Flesh, The**	*nov A*
—	6	5	**State Department—File 649**	*mel-c A*
—	1	3	**Strange Gamble**	*wes AYC*
—	—	6	**Strange Mrs. Crane, The**	*cri-mel A*
1	3	—	**Stratton Story, The**	*dr AYC*
—	2	4	**Street Corner**	*dr A*
—	3	3	**Streets of Laredo**	*wes-c A*
—	5	2	**Strike It Rich**	*dr A*
—	8	2	**Sun Comes Up, The**	*mus-dr-c AYC*
—	1	2	**Symphony of Life**	*mus-dr-c A*
1	9	5	**Take Me Out to the Ball Game**	*mus-com-c AYC*
—	2	2	**Take My Life**	*mys-mel A*
—	3	4	**Tale of the Navajos**	*doc-c AYC*
—	6	5	**Tarzan's Magic Fountain**	*fan AYC*
—	3	2	**Temptation Harbor**	*dr A*
—	7	8	**That Wonderful Urge**	*com A*
—	1	12	**This Was A Woman**	*dr A*
—	11	9	**Three Godfathers**	*wes-c A*
—	2	2	**Thunder in the Pines**	*mel A*
—	3	1	**Tomorrow's a Wonderful Day**	*doc-dr A*
—	2	5	**Too Late for Tears**	*cri-mel A*
—	—	3	**Triggerman**	*wes AYC*
—	2	2	**Trouble Preferred**	*mel A*
—	3	2	**Troublemakers**	*com AYC*
2	6	—	**Tulsa**	*mel-c AY*
—	5	3	**Tuna Clipper**	*nat AYC*
—	1	2	**Tucson**	*wes AYC*
—	8	3	**Undercover Man, The**	*cri-mel A*
—	2	3	**Unknown Island**	*dr-c A*
—	3	6	**Untamed Breed, The**	*wes-c A*
—	1	4	**Valiant Hombre, A**	*mel AYC*
1	9	4	**Wake of the Red Witch**	*adv AY*
—	5	2	**Walking Hills, The**	*wes A*
—	3	2	**Wandering Jew, The**	*dr A*
—	3	4	**Waterloo Road**	*war-dr A*
—	1	3	**Wench, The**	*dr A*
—	2	4	**What's on Your Mind**	*doc A*
—	1	3	**When Love Calls**	*mus-dr A*
—	12	4	**When My Baby Smiles at Me**	*mus-com-c A*
—	5	8	**Whiplash**	*mel A*
1	11	5	**Whispering Smith**	*mel-c AY*
—	—	3	**Without Prejudice**	*dr A*
—	1	3	**Woman in the Hall, The**	*dr A*
—	2	9	**Woman's Secret, A**	*mus-mel A*
1	8	6	**Words and Music**	*mus-com A*
—	—	3	**Yank Comes Back, A**	*doc A*
—	12	4	**Yellow Sky**	*wes A*
—	14	2	**You Gotta Stay Happy**	*com A*

Preliminary Report on the Quality of the New RCA Victor 45 rpm. Records

CR's tests on the 45-revolutions-per-minute records recently introduced by RCA Victor have progressed to a point at which certain conclusions can be set down tentatively. More details on the findings will appear in a subsequent issue.

The records purchased for test were played with three grades of turntable and pickup equipment.

A brief period of listening to the $25 RCA player indicated that the crystal cartridge used was of good quality; with this player, the records sounded just as their counterparts in 78 rpm. vinylite records of the same make sound when played with a good type of crystal cartridge through high-quality amplifier and speaker equipment.

The *Webster 133* changer, which was one that was suitable for Columbia LP records, was altered to play the 45 rpm. records. Its performance was found to be entirely unsuitable for these records because of rumble.

The level of output from the Victor 45 rpm. record was even lower than that from Columbia LP's, emphasizing the vital importance of a very quiet turntable and noise-free amplifier.

A final comparison was made using a *Presto* 3-speed motor turntable equipped with two magnetic cartridges of like characteristics. (The *Presto* is a turntable of high-precision, of the grade used in broadcasting stations.)

The results of the above tests indicated that: (1) The RCA records tested were recorded at such low level that rumble and hum problems were severe when played over high-quality equipment using magnetic cartridges of good quality, and results with such cartridges may be expected to be worse than with the Columbia Long Playing records; (2) the dynamic range did not appear to be any wider on the 45's than on their 78 rpm. counterparts — under the nearly ideal circumstances of the last tests, Rachmaninoff's Concerto 2, for instance, on the 45's was very difficult to distinguish at all from its 78 rpm. counterpart on a Victor vinylite record; (3) it is felt that none of the RCA records tested matched the LP recordings in dynamic range, and the difference was greater on LP's made originally from masters recorded at 33-1/3 rpm.; (4) on none of the equipment used, at any setting of the tone controls, or with any variation in the equalizing, was there any improvement noted in an RCA 45 over its corresponding vinylite 78 rpm. version; distortion that was present on the 78 rpm. master was carried over onto the 45 rpm. version; and (5) measurements indicated that there was little response from the 45 rpm. records at frequencies above 5000 cycles per second.

The new 45 rpm. records give indications of causing trouble with warpage, which seems to be worse with these records than with types hitherto offered consumers.

These new records have advantages when used with the RCA playing device, in that surface noise is low, and the player especially made for them is a compact, convenient, and inexpensive changer unit. The records are also less expensive (about 10%) than their 78 rpm. counterparts. Otherwise test results indicate that of the new records heard thus far, the new 45 rpm. records offer little or nothing over the 78 rpm. vinylite records and that they are not nearly as good as the best 33-1/3 rpm. Columbia LP's.

Fluorescent Lamp Breakage

WE believe it will be of interest to many of our readers to know that Consumers' Research has received a great many requests for permission to reprint the article on the Poisoning Hazard in Breakage of Fluorescent Lamps which was printed in our March 1949 BULLETIN, and it appears that thousands of reprints have been distributed to members of hospital staffs, trade associations, and others. The requests have come from a variety of sources; some are from public school systems, hospitals, medical clinics; others from manufacturers and other business firms; public utilities, trade and technical associations; likewise a number of individuals. Those writing have expressed their desire to bring the matter promptly to the attention of their personnel or membership.

We are glad to know that our article has aroused such widespread interest among our readers. We hope that it may have a far-reaching effect in calling attention to the need for great care in the handling of fluorescent lamp tubes, and help users to adopt methods of handling and storing new and used lamp tubes that will avoid injury through contact with the glass and its beryllium coating, which in the past have caused a number of very serious injuries when tubes have become broken by accident, or by children playing with them.

The Consumers' Observation Post

(Continued from page 4)

uniform standards for pre-testing new insecticides on the ground that the economic and health problems are so acute that prompt action to establish safeguards is imperative. Beginning in 1945, CR has warned that particular care should be taken with respect to DDT to make certain that it was not taken into the mouth or the lungs, or allowed to come in contact with the skin. We have also advised against allowing the spray to be used in such fashion that it would come in contact with animals and animal forage, where it might find its way into milk, meat, and butter to be eaten by consumers. Recent developments have indicated that traces of this insecticide in foods constitute grave hazards to health, and it would appear that the U.S. Department of Agriculture may have been a bit hasty in giving its earlier O.K. on certain uses of DDT.

* * *

RECENTLY TESTED:

Quick-Shot Soldering Iron (The Kemode Mfg. Co., 2 W. 46 St., New York 19), $4.95, is a new type of soldering iron advertised as a product of the most advanced scientific research. The source of heat used is the Quick-Shot Hi-Heat Cartridge which is inserted into the hollow copper head of the iron. A plunger or "firing-pin" in the handle, when pulled back and released, "fired" the cartridge and the iron was thus heated. The advertising claimed that the

DON'T MISS THE BUS
-There's Still Time

but don't forget to place your order for the

1949-50 Annual Cumulative Bulletin—

ready in September 1949

WHAT is the Annual Cumulative Bulletin? Why, it's the big 200-page issue that comes out once a year, summarizing a wide range of CR's previous findings in the field of household appliances, radio and phonograph equipment, textiles and clothing, cosmetics, cameras and other photographic equipment, paint and other home maintenance and repair items, heating equipment, and household supplies. It also presents much new material that has never before appeared in any other CR Bulletin. Conveniently indexed for ready reference, it is often called the consumer's "handbook of buying."

SINCE it is a confidential issue, it is available only for the personal use of an individual subscriber and that of his immediate family. (Sorry, no school or library orders.) It is not included in a subscription, but is sent only on special order.

FOR those who have not already placed their orders for the forthcoming 1949-1950 Annual Cumulative Bulletin, which will be off the press in September 1949, there is a convenient order blank on the next page.

iron would heat "to working temperature in 5 seconds" and would maintain "intense heat for 8 to 10 minutes." A test by CR indicated that 25 seconds would be a more accurate statement of the time required for heating to a temperature suitable for soldering, and that the heat was maintained for only about 4 minutes rather than 8 to 10. It was estimated that the heat output of the iron during its active period was roughly the equivalent of a 150- to 200-watt electric iron. It would seem to be true that the iron might have certain useful applications, as in locations where electricity is not readily available, or in places where there might be an exceptional shock hazard in the use of an electrically heated iron. The high initial cost of the appliance and its operating cost (which runs to about 3 cents per minute as against 0.7 cents per hour for a 200-watt electric iron) would make its use uneconomical for the needs of many potential users.

Brico (Brico Corp., Dover Furnace, N. Y.), yellowish-white crystals. Alleged to "clean cleaner; like magic; better than soap; gentle to hands, paint, and fabrics." Found on analysis to consist of 2.3% sodium soap, 96.5% trisodium phosphate, with 1.2% of pine oil. Considering that the price of trisodium phosphate at retail is about 10 to 15 cents a pound, the manufacturers of Brico seem to have done very well for themselves in packing their product in an 8-oz. jar at 25 cents, since they are selling trisodium phosphate with moderate additions of soap and pine oil at a price roughly equivalent to 50 cents a pound. It should be noted that a 96.5% content of trisodium phosphate does not make a mixture that is "gentle to the hands, paint, and fabrics"; "tsp." is strongly alkaline, and would be wholly unsuitable for woolens, rayon, and colored silks. On paint it should be used only in weak solutions (1 teaspoon per gallon of water).

The Grab All Tool is a handy device that might be useful for some craftsmen and occasionally for the homemaker. The manufacturer recommends it, for example, for retrieving small objects which have fallen into places hard to reach by the hands; it is also advertised as useful in removing hair, strings, etc., from bath drains and similar uses in the home or shop. It consists of a flexible tubular metal casing, in which is a flexible rod having a plunger-type handle with a strong compression spring at one end and four steel claws made of spring wire at the other. Depressing the handle opens the claws to pick up objects as large as 3/4 in. in diameter or 1/2 in. in thickness; when the plunger-type handle is released, the claws close firmly on the object to be held. The device is available in several lengths – 9, 12, 15, and 18 inches, at 65c, 75c, 95c, and $1.20 postpaid, respectively, from Grab All Tool Co., 11703 S. Main St., Los Angeles 3.

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PHONOGRAPH RECORDS

BY WALTER E. GRUENINGER

Please Note: *In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.* Although nearly all new releases of serious music are heard, space narrows comment, generally, to sets which merit high ratings.

ORCHESTRA

Bartok: *Concerto for Orchestra.* Concertgebouw Orchestra of Amsterdam under Van Beinum. 10 sides, English Decca Set 105. $11.55. An impressive, major Bartok work. Frequently wonderful performance. Wide range recording with plenty of reverberation. In the softest passages surfaces are audible. Recording more realistic than that of the Reiner-Columbia release, particularly the 78 rpm. The 33 rpm. Columbia offers barely audible vinylite surfaces. Overall, Decca.
Interpretation AA
Fidelity of Recording AA

Debussy: *Petite Suite.* Paris Conservatory Orchestra under Ansermet. 4 sides, English Decca Set 98. $5.25. Magnificent, extended range, room resonant recording. Buoyant performance. Originally a delightful, melodious piano duet which Büsser has cleverly arranged for orchestra.
Interpretation AA
Fidelity of Recording AA

Debussy: *Printemps.* Royal Philharmonic Orchestra under Beecham. 4 sides, RCA Victor Set 1293. $2.50. An early, charming Debussy symphonic suite played with sparkle and beauty. Powerful, resonant, transparent, English recording.
Interpretation AA
Fidelity of Recording AA

Rimsky-Korsakoff: *Scheherezade.* Paris Conservatory Orchestra under Ansermet. 12 sides, English Decca Set 106. $13.65. Popular symphonic suite. When this recording was released in England, it was hailed by *The Gramophone* as a "remarkable achievement all around." That it is, with the possible exception of the harp, which is too close to the mike. The Ormandy-Columbia recording is no less outstanding, however, and offers more prominent and appropriate percussion effects which will please high fidelity fans particularly. Best buy: Columbia Long Playing disk ML 4089 ($4.85).
Interpretation AA
Fidelity of Recording AA

Strauss Overtures. Philadelphia Orchestra under Ormandy. 4 sides, Columbia Set MX 311. $3.50. The glorious "Die Fledermaus" and "The Gypsy Baron" overtures. Animated, enjoyable performance. Good domestic recording lacking just a little clarity in the high registers. Side 4 swishes.
Interpretation AA
Fidelity of Recording A

Stravinsky: *Symphony of Psalms.* Columbia Broadcasting Symphony Orchestra with Mixed Chorus under the Composer. 6 sides, Columbia Set 814. $4.15. In October, I reported on the fine English Decca release — Set 52 ($7.35). Columbia's recording of this strange, rarely heard work bears the incisive stamp of the composer who is an able conductor of his own music. Columbia's recording sounds best on my high fidelity set when high frequencies are attenuated. Except for price, there is no other significant difference between sets.
Interpretation AA
Fidelity of Recording AA

CONCERTO

Mozart: *Concerto for Flute and Harp* (K299). Le Roy (flute), Laskine (harp), with the Royal Philharmonic Orchestra under Beecham. 6 sides, RCA Victor Set 1292. $4.75. Crisp, sensitive performance of a glowing work. Richly recorded in England. Solo instruments not unduly prominent.
Interpretation AA
Fidelity of Recording AA

Mozart: *Piano Concerto No. 9* (K271). Gaby Casadesus (piano) with the Lamoureux Orchestra under Paray (7 sides) & *Six Variations in F Major.* Casadesus (piano) Vox Set 650. $6. An exquisite work. The competent performance suffers, however, when compared with the great Gieseking-Columbia Set 291. Fidelity of both recordings about equal, with highs cut off too soon. Vox surfaces are satisfactory, though less quiet than Columbia's. Overall, Columbia.
Interpretation A
Fidelity of Recording A

Paganini: *Concerto* (Op. 6). Ruggiero Ricci with the Lamoureux Orchestra under Bigot (5 sides) & **Kreisler:** *Recitativo* and *Scherzo-Caprice.* Ricci (1 side). Vox Set 649, $4.75. The one movement transcription by Wilhelmj, a challenge to any virtuoso. Phenomenal playing by Ricci and unobtrusive playing by the orchestra are offset by restricted range. Paris recording and excessively noisy surfaces.
Interpretation AA
Fidelity of Recording B

VOCAL

Britten: *The Rape of Lucretia.* Pears, Cross, Lumsden, Dowling, Sharp, Evans, Neilsen, Ritchie and Chamber Orchestra conducted by Goodall under the supervision of the Composer. 16 sides, RCA Victor Set 1288. $13. Chamber opera produced on Broadway this season where critical reception was unfavorable. Voices are fair, in the British manner. Sharp and Evans are best. Words are difficult to understand at times and no helpful libretto is provided. Small orchestra so balanced that sometimes it overshadows singers. High frequencies are cut off too much, making sibilants rare.
Interpretation A
Fidelity of Recording B

Ravel: *Scheherezade.* Danco (soprano) with the Paris Conservatory Orchestra under Ansermet. 4 sides, English Decca Set 100. $5.25. Seldom heard, exotic, beautiful song cycle. Sung with admirable simplicity and purity of French style. Well balanced, wide range recording with voice clear and warm. New-type, recommended, dust-resistant box album.
Interpretation AA
Fidelity of Recording AA

LIGHT

Marimba Classics. Doris Stockton. 8 sides, RCA Victor Set P 222. $4. Worry not about technique. Yet, "Ave Maria" and "The Swan" sound less persuasive here, on the marimba, than "Hora Staccato" and "Perpetual Motion." Good recording though the orchestra is too distant.
Interpretation AA
Fidelity of Recording A

Tropical Isle. Alvino Rey and His Orchestra. 6 sides, Capitol Set CC 141. $3.15. "Sentimental Journey" "Wabash Blues," etc., played in slow time by a solo Hawaiian guitar.
Interpretation AA
Fidelity of Recording AA

Viennese Waltzes. Ronnie Munro and His Orchestra. 8 sides, London Set 74. $3.93. Abbreviated "Vienna Blood," "Acceleration," "Danube Waves," etc., played for dancing. Wide range recording.
Interpretation AA
Fidelity of Recording AA

RECOMMENDED SINGLE DISKS

COLUMBIA MICROGROOVE: Burl Ives on 1-175. RCA VICTOR: Gigli and Elmo on V 12-0767. Brailowsky on V 12-0794. Boston Pops Orchestra on V 12-0763 and V 12-0796. Fischer on V 11-0031.